THE IRON TRADE REVIEW

Volume XLI CLEVELAND, OCTOBER 10, 1907 Number 15

FALSE REPORTS

OF DISCHARGE OF THOUSANDS OF EMPLOYES

From Busy Plants.—Deadlock on Rail Specifications.—Large Pig Iron Production.—Heavy Ore Shipments.

Many false rumors have been in circulation concerning the proposed blowing out of blast furnaces and the contemplated discharge of a large number of employes by various manufacturing concerns. The United States Steel Corporation is still needing all the iron it can make, and this is true of practically all the large producers. While some furnaces may be blown out for repairs during the present month, our statistics show that production is keeping up remarkably well through the dull period, the average daily production being only about 150 tons less in September than in August, while on Oct. 1 there were 328 stacks in blast, a loss of only one stack as compared with Sept. 1. It is not, of course, probable that furnaces will accumulate iron to any considerable extent unless the market improves, but there is no prospect of a sharp curtailment of production. The Steel Corporation has not laid off thousands of men, as reported, and does not expect to do so, nor has the Pressed Steel Car Co., which has recently taken orders for about 3,000 cars, and needs more men.

Steel Rail Controversy

It is understood that there is a deadlock between the railroad interests and steel manufacturers concerning the specifications of steel rails, the former holding out for a reduction of the phosphorus content from 0.010 per cent to 0.0085 per cent, to which demand a very proper reply has been made by the steel interests that such a reduction would be a physical impossibility, because neither the present nor prospective ore supply will make it possible to manufacture in sufficient quantities to meet the demand. The question of cropping offers no unsurmountable difficulty, being chiefly a price consideration. When the American Railway Association meets in New York, Oct. 30, its committee on rail specifications will report, and until that time nothing will be done. The Bethlehem Steel Co. has sold the Lehigh Valley 15,000 tons of open-hearth rails, and the sale of a round tonnage of Bessemer rails is reported in Chicago, but the deadlock concerning specifications and also financial considerations will delay the further placing of orders.

Heavy Ore Shipments

Ore shipments of September from the Lake Superior region show an increase of 787,993 tons over the same month last year, and the gain to date is 2,408,451 tons. Shipments from the head of the lakes for the first week of October show an increase of 200,000 tons, and it now seems very probable that the shipments for the season will amount to fully 41,000,000 tons.

Pig Iron Still Dull

Buying of pig iron is confined largely to small lots for prompt shipment, but one large southern interest reports the sale of several round lots at $18.50, for this year's delivery. Other southern producers are, however, selling at somewhat lower figures, and in the east a considerable tonnage has been booked at figures below current quotations. The Bessemer pig iron market is still firm at $22 valley, but is likely soon to be tested by independent interests changing from the manufacture of foundry

(Continued on page 579.)

GREAT BENEFITS

RESULTING FROM THE GAYLEY DRY AIR SYSTEM.

Valuable Results Reported to the Pittsburg Foundrymen's Association.—Shortage of Iron Shipments Discussed.

The annual meeting of the Pittsburg Foundrymen's Association was held at the Hotel Henry, Pittsburg, on Monday evening of this week. The features of the evening were the addresses and discussion brought about by the talks of James Scott of Isabella furnaces, Carnegie Steel Co., and C. W. Mason of the Midland Steel Co., on "Uniformity and Modern Ideas for Making Pig Iron." The annual election of officers resulted in the unanimous selection of H. E. Field of the Mackintosh-Hemphill Co., president; Elliot A. Kebler of Matthew Addy & Co., vice president; J. S. Seaman of Seaman-Sleeth & Co., treasurer, and F. H. Zimmers of Union Foundry & Machine Co., secretary. The retiring president, H. P. Spilker of the Sterritt-Thomas Foundry Co., made a graceful speech, complimenting the association and its officers for the support they had given him, and President Field in assuming the duties of president, in an address urged a larger attendance at meetings and an effort to increase membership, saying that no expense had been spared in securing able speakers on subjects of interest to the foundrymen, and that the association deserved the earnest support of everybody in the business.

The New England Foundrymen's Association, in a communication to the Pittsburg association, asked that the latter appoint a committee to investigate the shortages in shipments, and, if possible, suggest some redress for abuses which foundrymen and other consignees are constantly encountering in this direction. At the present time, pig iron and coke are sold on railroad weights and often, when they reach destination, are short. President Spilker appointed a

(Continued on page 580.)

THE WEEK IN IRON CENTERS

PITTSBURG.

New Makers of Bessemer Pig—Decline in Nominal Prices of Foundry Iron.

Office of THE IRON TRADE REVIEW,
521 Park Bldg., Oct. 8.

While the feeling is better and talk more optimistic, there are sharp lines of demarkation between the strength of the situation as it relates to finished lines on one hand and raw material and semi-finished lines on the other. Taken as a general proposition, prices on finished material are being well maintained, price inducements being offered only in isolated cases and in such a manner that they have no general reflection on the market of the commodities affected. Mill shipments, as has been the case for some time past, are greater than specifications against contracts, and manufacturers are, as a consequence, catching up on their deliveries and promises of shipments are better now than they have been for several months. During the past week, some very desirable new business has been booked, some of it in steel bars, some of it in structural shapes, and more new merchant pipe and wire contracts have been placed, but on the heavy lines, rails, plates, etc., the new business is at a standstill and indications are that there will not be much improvement before the first of the year, at least.

The sub-committee of the railway association, together with representatives of the rail makers, has concluded its work by disagreeing and indications are that there will be a still further delay in placing new 1908 rail business, not so much because this committee failed to agree on section and content, as because the railroads are not buying, the reason being the tightness of the money situation. The leading interest has on its books enough rail tonnage to carry it through until next February, if all contracts were specified, but one-half that time would put the mills through specifications now on hand. Other manufacturers on railroad work are also running light with the exception of the steel car companies which are working out contracts placed early in the year and are taking on very little new business for this time of the year.

So much for the finished lines. With the exception of Bessemer pig iron, there is no definite market price. Bessemer has been holding strong on account of the sold up conditions of the furnaces and the united efforts of producers to keep the market clean. Most of the producers have sold up to the first of the year, a great many of them have oversold and are behind on their contracts. A new factor on Bessemer entered the market during the past week when Corrigan, McKinney & Co., announced that if they could secure a contract for 20,000 tons of Bessemer for November and December delivery, they would take their Josephine furnace off foundry iron and put it on Bessemer. M. A. Hanna & Co. have also put their Buffalo furnace on Bessemer iron. These newcomers have upset the calculations of the big independent producers, but it is thought their product can be disposed of without unduly disturbing the market, which is now on the basis of $22 valley.

Steel prices are easier and the supply better than for some time past, producers of semi-finished material are making better deliveries on contracts and finished mills are experiencing no trouble in their supply with the possible exception of sheet mills, the latter still having some difficulty in maintaining a safe supply of steel ahead of them.

Pig Iron.—The announcement of Corrigan, McKinney & Co., that the advisability of changing Josephine furnace from foundry to Bessemer iron, and a similar change already inaugurated by Hanna & Co.'s Buffalo furnace, together with a decline in the nominal prices of foundry and basic pig iron were the features of the market in this district. Josephine furnace will be changed over if a sale of 20,000 tons for November and December can be made. There is one large inquiry for Bessemer iron in the local market, this being for 8,000 to 10,000 tons for October and November. A deal involving a good sized tonnage of basic iron is also pending and will probably be closed before the end of the week at slightly under $20 valley furnace. In the absence of all sales, the market on Bessemer is firm at $22 valley. The regular producers announce they have no more Bessemer for shipment on new contracts before the first of the year and should the grade of output be changed on Josephine, the tonnage will probably be readily absorbed without disturbing present prices.

There is no movement in foundry iron. The sales have been in carload lots to tide over immediate requirements and these sales have not been enough to substantiate any fixed quotation. There has been sharp competition on all inquiries and the low prices quoted on foundry grades have had a tendency to scare off prospective buyers of round tonnages, if there were any considering such a move. Northern No. 2 foundry iron in carload lots has been sold at $21 valley and it is not unlikely that on a round tonnage, 1,000 tons or over, $20 valley could be done. For delivery over the remainder of the year, we quote as follows on round tonnages:

Bessemer, Valley	$22.00 to 22.25
Bessemer, Pittsburg	22.90 to 23.15
No. 1 Foundry, Pittsburg	21.65 to 22.15
No. 2 Foundry, Pittsburg	20.90 to 21.90
Gray Forge, Pittsburg	19.90 to 20.40
Basic, Valley	19.75 to 20.25
Basic, Pittsburg	20.65 to 21.15

Ferro-Manganese.—There have been no sales recently upon which to base quotations, but the sharp competition in trying to create some activity and move material has materially lowered current quotations to prospective buyers and we quote ferro-manganese nominally at $56 to $57 delivered Pittsbrug for delivery over the remainder of the year.

Imported 50 per cent ferro-silicon is quoted $100 to $102 Pittsburg, for prompt at $97 to $98 on forward deliveries, domestic 12 per cent, $36; 11 per cent, $35; 10 per cent, $34. The lower grades of imported ferro-silicon are quoted 50 cents lower. These quotations are applicable to Pittsburg territory. Western and central western prices, where the material is not subject to the competition of foreign grades, are higher, and in the east a little lower.

Plates.—Pipe makers and the steel car companies are taking their material in good shape, but there has been but very little new business. A car shortage at finishing mills has hampered shipments to some extent and disarranged delivery promises, but as a general proposition, the situation is good. We quote as follows:

Tank plate, ¼-inch thick, 6¼ to 100 inches, 1.70c f. o. b. mill Pittsburg. Extras are as follows per 100 pounds: Boiler and flange steel plates 0.10c. A. B. M. A. and ordinary firebox steel plates, 0.20c still bottom steel, 0.30c marine steel, 0.40c locomotive firebox steel, 0.50c all sketches, excepting straight taper plates varying not more than four inches in width at ends, narrowest end not being less than 30 inches, 0.10c; circles, 0.20c; plates in width over 100 inches up to 110 inches, 0.05; over 110 inches up to 115 inches, 0.10c; over 115 inches up to 120 inches, 0.15c; over 120 inches up to 125 inches, 0.25c; over 125 inches up to 1.30 inches, 0.50c; over 130 inches, 1.00c. Gages under ¼-inch to and including 3-16-inch plate on thin edges, 0.10c; under 3-16 to and including No. 8, 0.15c; under No. 8 and includ-

ing No. 9, 0.25c. Five cents extra for less than carloads. Terms net cash in 30 days.

Sheets.—There is not much new business although a little has been going right along. The sentiment has improved during the week. Specifications have been good. There has been some report of shading in prices on black and galvanized sheets, but it is not general, and this condition does not represent the majority of producers by any means. On account of the high price of semi-finished steel independent producers are exerting themselves to maintain prices. We continue to quote as follows:

Black steel sheets, one pass, cold rolled, Nos. 11-12, 2.20c; Nos. 13-14, 2.25c; Nos. 15-16, 2.30c; Nos. 17-21, 2.35c; Nos. 22-24, 2.40c; Nos. 25-26, 2.45c; No. 27, 2.50c; No. 28, 2.60c; No. 29, 2.75c; No. 30, 2.85c; galvanized Nos. 10-11, 2.65c; Nos. 12-14, 2.75c; Nos. 15-16, 2.85c; Nos. 17-21, 3.00c; Nos. 22-24, 3.15c; Nos. 25-26, 3.35c; No. 27, 3.55c; No. 28, 3.75c; No. 29, 4.00c; No. 30, 4.25c; blue annealed, No. 10 and heavier, 1.85c; Nos. 11-12, 1.90c; Nos. 13-14, 1.95c; Nos. 15-16, 2.05c. Corrugated roofing, $1.90 per square for No. 28 painted, 2½ inch corrugation, and galvanized, $3.25 per square for No. 28.

Tin Plate.—Specifications are fair, and are coming in some instances from unexpected sources where consumers have under-estimated their requirements. A little more business has been done during the past week on first quarter business at the ruling price. We quote as follows:

Coke tin plate 100-pound basis, 14 x 20, $3.90 f. o. b. mill, Pittsburg district. Terms, 30 days, less 2 per cent for cash in 10 days.

Rails and Track Material.—The old rumor as to the ultimate intention of the Jones & Laughlin Steel Co., to enter the manufacture of rails with the completion of the new plant at Aliquippa has again been revived. This plant will use open-hearth steel entirely, but it could not become a factor short of two years as its first new blast furnace will not be blown in before February and as yet no plans beyond the blooming mill point have been announced. Rail buying for the past two months has been very light and the average weekly new bookings have not been much more than one day's run during that time. Announcements of suspensions for repairs after the steady run of the past two years, with a slight interruption during the last Christmas holidays, is expected within the next two months. On the 1907 sections and specifications we quote as follows:

Fifty-pound and heavier, 500-ton lots and over, $28; carloads and less than 500 tons, $30; less than carload lots, $32; 8-pound, $40; 12-pound, $36 to $37; 16-pound, $35 to $36; 20-pound, $34 to $35; 25 to 45-pound, $33 to $34; angle splice bars for standard sections, $1.65; standard spikes, $2.15 to $2.20 Pittsburg; hand spikes, $2.40 to $2.50 Pittsburg.

Steel.—The supply of semi-finished steel has shown a marked improvement in all lines except sheet and tin bars, which are still scarce, the four leading producers in this district being practically out of the market for the remainder of the year and the price is firm at $31 mill. Prices are easier on Bessemer billets and $28.50 mill is quoted by Pittsburg producers, which will be shaded 50 cents by outside mills. Open-hearth billets are quoted $31 to $31.50 mill. Finishing mills, aside from those making sheets, are not experiencing any difficulty in securing an adequate supply of semi-finished steel, and producers are farther caught up on old contracts than they have been for several months.

Hoops and Bands.—This market has been running along evenly with mill shipments slightly in excess of specifications, but with a fairly good demand for material. Special lines are figuring on next year's requirements, but present new business is comparatively light. We continue to quote as follows:

Hoops in carload lots, 2c; in less than carload lots, 2.10c; bands, 1.60c; base half extras as per standard steel; cotton ties, 97½c per bundle.

Merchant Bars.—Some very desirable new steel bar business has been closed since the first of the month and more is pending. Specifications are not so good as manufacturers would like to see them and mill shipments are running considerably ahead of specifications. Prices are very firm, however, and while the situation at the present time is not the rosiest, indications of an improvement are noted in a slightly better demand for shipments. During the week, several bar iron contracts running into next year were closed. There is a little irregularity in iron bar prices, but as a general proposition 1.70c base Pittsburg for Pittsburg shipment and 1.60c base for western shipment are being maintained, although lower prices are reported out of Cleveland. We continue to quote:

Common iron bars, 1.70c to 1.75c Pittsburg in carload lots and over, 1.75c to 1.80c in less than carloads; 1.60c base Pittsburg, plus freight to point of shipment on western deliveries; Bessemer steel bars, 1.60c net for future deliveries; 1.85c to 1.95c out of stock; plow and cultivator, 1.60c net; channels, angles, zees, tees, under three inches, 1.70c, all f. o. b. Pittsburg. The following differentials are maintained on steel. Less than 2,000 pounds, 0.10c advance; less than 1,000 pounds of a size, 0.30c advance. Cold rolled and ground shafting, 50 per cent off in carloads, and 45 per cent in less than carloads, delivered in base territory; open-hearth spring steel, 2.25c to 2.50c; sleigh shoe flats, 1.60c to 1.65c; smooth finished machinery steel, 1.90c to 2c; toe calk, 2.10c to 2.15c. The price of planished and machine straightened tire is 1.80c, base, half, tire extras. Iron finished tire up to 1½ inch and over to be sold on regular bar basis of 1.60c base, half extras, steel card.

Structural Material.—Mills are making their range of rollings on scheduled time and there is a good line of specifications. Fabricating companies are finding new business dull and scattered, but have a fair amount of work ahead and have not been worried over the outlook for the immediate future, although most of the contemplated big building operations are being held up. Prices are unchanged and we continue to quote:

Beams and channels, 15-inch, and under, 1.70c; over 15 inches, 1.90c; zees, 1.70c; tees, 1.70c; angles from three to six inches inclusive, 1.70c; over six inches, 1.80c; universal and sheared plates, 6¼ inches and wider, 1.80c base.

Merchant Pipe.—The pipe market is in good condition and prices are firm. Some of the material that has been held under suspension has been released, and this is taken as a very favorable sign of improvement. It is a hard matter to point out just where the increase has been, but it is general and the sentiment regarding the future is very optimistic. We quote the following official discounts of the leading interest to consumers in large lots.

	—Steel— Black.	Galv.
⅛ and ¼ inch	65	49
⅜ inch	67	53
½ inch	69	57
¾ to 6 inches	73	63
7 to 12 inches	70	55
EXTRA STRONG PLAIN ENDS.		
⅛ to ⅜ inch	58	46
½ to 4 inches	65	53
4½ to 8 inches	61	49
DOUBLE EXTRA STRONG PLAIN ENDS.		
½ to 8 inches	54	43

Boiler Tubes.—There has been no suspension as far as boiler tube contracts are concerned. Contracts are

running along nicely about the same as they have been all summer, and an improvement in sentiment is noted here as in merchant pipe. We quote the following discounts of the leading interest.

	Iron	Steel.
1 to 1½ inch	42	47
1¾ to 2¼ inch	42	59
2½ inch	47	61
2¾ to 5 inch	52	65
6 to 13 inch	42	59

2¼ inches and smaller, over 18 feet, 10 per cent net extra.
2¾ inches and larger, over 22 feet, 10 per cent net extra.

Wire Products.—The demand for wire products has shown a marked improvement, particularly in fencing. No shading is being done on the price established Sept. 3 and mills have begun to again get behind on their deliveries. We continue to quote:

Wire nails, jobbers' carload lots, $2.05, retailers' carload lots, $2.10; less than carloads, $2.15; painted barb wire, $2.20 for jobbers in carloads; retailers in carloads, $2.25; and less than carload, $2.35; with 30c for galvanizing; plain wire, 1.90c for jobbers, and $1.95 by carload.

Coke.—There is a good demand for both furnace and foundry grades of standard Connellsville coke, and the market is very firm at $2.90 to $3 at the ovens on furnace grades, and $3.25 to $3.40 on foundry grades. With the cold weather, a better production is expected, but with the heavy demand there is no present indication of lower prices.

Old Material.—Scrap prices continue to decline and this week we note quotations from 25 to 50 cents below those of last week in practically all grades. There is absolutely no buying, and consumers are not at all interested in offerings made them. Mills are well stocked up, and with present market conditions will not buy until they have used everything they have on hand. We quote the following nominal prices, gross tons, delivered in the Pittsburg district:

Heavy melting scrap, $17.25 to $17.75; rerolling rails; $18.75 to $19; bundled sheet scrap, $14 to $14.50; iron axles, $26.50 to $27; old iron rails, $21 to $22; No. 1 wrought scrap, $17.50 to $18; old car wheels, $23.50 to $24; low phosphorus scrap, $21 to $21.50; machine shop turnings, $13.50 to $14; cast borings, $12.50 to $13; No. 1 cast scrap, $18.50 to $19.

A new blowing engine is being installed and other repairs made to the San Lanham furnace, Rusk, Tex., operated by the state of Texas. The furnace will probably be banked or blown out about Nov. 1 and will be idle about two months.

CHICAGO.

Little Activity Except For Tonnage For Prompt Delivery.

Office of THE IRON TRADE REVIEW,
1362 Monadnock Block, Oct. 8.

The market has been without character in the past week. With few exceptions, activity has been confined to small tonnages and quick business. At the same time, a quiet but positive confidence has supported every class of products. In steel rails a notably better tone had its inception Oct. 1 and one tonnage of good proportions has been contracted for in addition to a very satisfactory routine business with premiums offered in at least one instance for prompt shipment. Structural steel orders, though still withheld from the market, have come in for fair sized lots as evidenced by contracts for lots of 320, 525, 720 and 1,500 tons Plates and shapes for the construction of three steel barges were taken by the American Bridge Co. Store prices remain firm on the strength of good inquiries and a steady consumption throughout the remainder of the year. Tonnages of cast iron pipe in sight are very scarce, but in the week under review the Los Angeles contract for 6,000 tons was taken by the United States Cast Iron Pipe & Foundry Co. Pig iron trading at present is a process of manipulation rather than a movement direct from the furnace to fill consumers' needs. Customers now receiving iron on delayed deliveries, with their own requirements filled by previous purchases of spot iron, are reselling. Such iron, however, is not sufficient to cover all shortages and the current consumption as well and the carload lots are disposed of freely. Prices have not been eased off in this or other lines with the exception of track spikes and bolts which may be had for 10 cents under last week's quotations, forward delivery.

Pig Iron.—The pig iron situation is exactly as it has been for a month past. Sales of large lots of pig iron of any grade are occurrences unknown, but trading in carload lots is quite active. Numerous tonnages up to 300 are being sold in disposing of cars in transit or on track and one transaction where six or seven cars changed hands was made, but all this iron is for quick delivery and immediate consumption. Consumers of pig iron are leading a hand to mouth existence and there is no prospect of change until the close of this quarter. Prices remain as a week ago with No. 2 foundry for delivery until the end of the year at $22.50 and small lots of spot iron of the same grade bringing a dollar more. Inquiries are plentiful, but there seems to be no disposition to do business beyond immediate necessities. Furnaces are still delivering iron contracted for earlier in the year and local furnace yards are pretty free of iron. High silicon irons continue firm with an uncertain supply. We quote, Chicago:

Lake Superior Charcoal	$26.50 to 27.00
Northern Foundry No. 1	23.50 to 24.00
Northern Foundry No. 2	23.00 to 23.50
Northern Foundry No. 3	22.50 to 23.00
Southern Foundry No. 1	22.85 to 23.35
Southern Foundry No. 2	22.35 to 22.85
Southern Foundry No. 3	21.85 to 22.35
Southern Foundry No. 4	21.35 to 21.85
Southern No. 1 Soft	22.85 to 23.35
Southern No. 2 Soft	22.35 to 22.85
Southern Gray Forge	20.85 to 21.35
Southern Mottled	20.35 to 20.85
Southern Silveries, 4 per cent Silicon	24.35 to 24.85
Southern Silveries, 5 per cent Silicon	25.35 to 25.85
Southern Silveries, 6 per cent Silicon	26.35 to 26.85
Jackson Co. Silveries, 6 per cent	30.40
Jackson Co. Silveries, 8 per cent	32.40
Jackson Co. Silveries, 10 per cent	34.40
Malleable Bessemer	23.00 to 23.50
Standard Bessemer	23.90 to 24.40
Valley Basic	22.40 to 22.90
Alabama Basic	23.35 to 23.85

Billets and Rods.—A slight lessening in the number of inquiries is practically the only change in billets. While prices are none too firm, sales of small tonnage have been made at the market quotation without much trouble and where immediate shipment was wanted there was even some difficulty in placing the order. Forging billets command $36 Chicago. For rolling billets the Pittsburg price is $29.50 to $30; $37 for Bessemer wire rods; $38 for open-hearth rods and $31 to $31.50 for sheet bars; all f. o. b. Pittsburg.

Merchant Bars.—Inquiries and specifications continue to come in, paving the way for a healthy routine business in covering immediate requirements of both iron and steel bars. Agricultural needs are still responsible for sales of small tonnages and a number of such transactions have been made in the week. An underlying tone of strong confidence holds up the market in these materials very firmly and, with the rolling capacity of the mills well provided for, deliveries continue three months behind. This is especially true of large rounds, small shapes and hoops. Prices on shafting are nominal, but an open market exists and prices have been shaded to a considerable extent. Some interests have withdrawn quotations. Hard angles rolled from old rail stock remain at 1.75c Chicago, but high carbon angles rolled from billets command a correspondingly better price. Although business for forward delivery is not coming in in any quantity, the situation at present is much too firm to admit of any changes in price and no disposition to do so is apparent. Our quotations remain, therefore, on carload lots, Chicago delivery, as follows:

Bar iron, 1.78c; soft steel bars and bands, 1.78c; half extras; soft steel angles, less than 3 x 3, 1.88c; hoops, 2.18c base, full extras; planished or smooth finished tire steel, 1.98c; iron finish, up to 1½ x ½ inch, 1.93c base; iron finish, 1½ x 1½ inch and larger, 1.78c base; channels for solid rubber tire, ¾ to 1 inch, 2.28c, and 1⅛ inch and larger, 2.18c; smooth finished machinery steel, 2.18c; flat sleigh shoe, 1.83c; concave and convex sleigh shoe, 1.93c; cutter shoe, 2.36½c; toe calk steel, 2.33c; railway spring, 1.98c; crucible tool steel, 7c to 9c, with higher prices asked on special grades. Quotations on shafting are 55 and 5 off the list f. o. b. Pittsburg for car load lots, and 55 per cent off for less than car load lots. On iron and steel bars from local stocks, we quote as follows: Bar iron, 2.25c full extras; soft steel rounds, and square, 3-inch and larger, $2 per 100-lbs. base; flats, 2 inches to 4 inches by ⅛ inch and larger, $2 per 100 pounds base; 4½ inches by 5 inches and 6 inches by 5-16 inch and thicker, $2 per 100 pounds base; all ovals, half rounds, $2 per 100 pounds base; steel bands, $2 half extras; soft steel hoops, $2.50 full extras. Other sizes not mentioned above, $2 per 100 pounds base plus half extras.

Plates.—Orders for plates are on the books of the leading producer in filling which its mills will be rolling material for nine months, and in general mills are well filled up for the present. Considering the retarded deliveries and the slowness of new business for next year, inquiries for the balance of the year are coming in very well and a fair volume of business is being done. No tonnages of noteworthy size have been contracted for during the week and we quote without change:

Plates, ¼ inch and heavier, 6¼ to 100 inches wide, either universal or sheared, 1.70c Pittsburg base. For extras see Pittsburg report. Freight rate to Chicago, 18c per 100 pounds for carload lots, and 21c for less than carload lots. Jobbers' prices for shipment from local stocks are as follows: Tank steel, ¼ inch and heavier up to 72 inches wide, 2.20c; 3-16 inch up to and including 60 inches wide, 2.30c; 3-16 inch, 72 inches wide, 2.55c; No. 8 up to 60 inches wide, 2.50c. Flange steel, 25c extra; heads, 25c extra.

Sheets.—The situation in the rolling of sheets is such that the mills are much too busy taking care of existing contracts to be greatly concerned about present business and orders for next year, as in other lines, is largely lacking. A sufficient volume of requirements is however, supplied from day to day to prevent any improvement in deliveries and three months is asked on heavy black sheets though on light black gages only from four to six weeks is necessary. Our quotations are as follows:

Black sheets, Nos. 8, 9, and 10, 1.85c to 1.90c Pittsburg; No. 28, 2.60c Pittsburg. Galvanized sheets, No. 28, 3.75c Pittsburg. Freight to Chicago, 18c per 100 pounds for car load lots, and 21c for less than car load lots. Jobbers' prices on car load lots and less from store are as follows:

No. 10, 2.50c to 2.55c; No. 12, 2.55c to 2.60c; No. 14, 2.60c to 2.65c; No. 16, 2.70c to 2.80c; Nos. 18-20, 2.80c to 2.90c; Nos. 22-24, 2.85c to 2.95c; No. 26, 2.90c to 3c; No. 27, 2.95c to 3.05c; No 28, 3.05c to 3.15c; No. 30, 3.35c to 3.45c. Galvanized sheets, Nos. 10 to 20, 3.50c to 3.55c; Nos. 22 and 24, 3.65c to 3.75c; No. 26, 3.85c to 3.90c; No. 27, 4.05c to 4.15c; No. 28, 4.25c to 4.35c; No. 30, 5.40c to 5.45c.

Structural Steel.—The influence of the money market is still held responsible for the inability to close contracts for structural steel where tonnages of good size are known to be otherwise ready for placement. It is reported that 7,500 tons is being held up at San Francisco and the local tonnage similarly delayed is well known. A firm feeling exists, however, among fabricators that this business will come in before the close of the year and that there is nothing in business conditions to justify easing prices to bring out this tonnage. The American Bridge Co. took an order for three steel barges for the Union Sand Co. of St. Louis, involving 525 tons, and an eastern independent interest closed for 1,500 tons of angle bars. Other tonnages of 720 and 320 were placed during the week and altogether the market for the week shows a noticeable improvement both in sentiment and the actual run of business. Our quotations remain without change as follows.

Beams and channels, 3 to 15 inches inclusive, 1.70c Pittsburg. For extras see Pittsburg report. Freight rate from Pittsburg to Chicago, 18c per 100 pounds for carload lots, and 21c per 100 pounds for less than carload lots. Quotations from store are as follows:

All angles, three inches and larger, including six inches, $2.05 per 100 pounds; angles, over six inches, $2.15 per 100 pounds base; beams, 3 to 15 inches inclusive, $2.05 per 100 pounds base; channels, three inches and larger, $2.05 per 100 pounds base. Less than carload lots are $1 a ton higher than foregoing prices.

Rails and Track Supplies.—The rail business has shown a condition of growing improvement since Oct. 1, and with reservations to provide for such changes in specifications as the conference may bring about, contracts for new tonnages of considerable volume are beginning to come in, among which is one of a round tonnage running into five figures. One lot of 500 tons was sold locally by an independent interest for immediate shipment at a premium. Orders for track supplies are in good volume as compared with general trading, but prices are easy and we note the shading of the quotation on spikes and bolts, which can be had for future delivery at from 2c to 2.10c and 2.50c to 2.60c, respectively. Other prices remain without change. We quote:

Bessemer rails, $28 to $30; less than 500-ton lots, $32; open-hearth rails, $29; light rails, Bessemer, 30 to 45-pound sections, $34; 25-pound, $35; 20-pound, $36; 16-pound, $37; 12-pound, $38, and lighter sections down to 8-pound, $44.50, all f. o. b. mill. Track supplies vary in price according to quantity and delivery. On orders accompanying rail contracts for future delivery, we quote, f. o. b. Joliet: Angle bars, 1.65c; spikes, 2.0c to 2.10c; bolts with square nuts, 2.50c to 2.60c; with hexagon nuts, 2.75c. For carload lots or less, for prompt shipment, the following prices are asked: Angle bars, 2.25c to 2.75c; spikes, 2.40c to 2.50c; bolts with square nuts, 2.85c; with hexagon nuts, 3c.

Cast Iron Pipe.—The contract to supply 6,000 tons of pipe to the city of Los Angeles has been given to the United S ates Cast Iron Pipe & Foundry Co. The order is made up of sizes from 4 to 24 inches. Although the contract for the pipe required by the town of Quoin, Ill., has been let to a contractor, some financial considerations remain to be settled which may result in the withdrawal of the business. No tonnages of note are in sight and present trading is light. Inquiries, however, are very fair in number. We continue to quote 4-inch water pipe, $37; 6 and 8 to 12-inch, $36; larger sizes, $35; gas pipe, $1 a ton higher.

Merchant Pipe and Boiler Tubes.—There are no changes to record in these lines either in the quantity of business or prices. Deliveries are somewhat improved. Mills are well supplied with orders for the present and no effort is being made to force business. Inquiries are normal for quick delivery business.

We quote mill discounts, Chicago delivery, carload lots, as follows: On steel pipe, jobbers are allowed a concession of one point and five per cent additional from the schedule in force.

MERCHANT PIPE.

	—Steel— Black.	Galv.
¼ to 6 inches, inclusive.....	71.2	61.2

BOILER TUBES.

	Steel.	Iron.
2¼ to 5 inches, inclusive....	62.2	49.2

Mill quotations on iron pipe are from four to five points higher than above. A concession of one point from the following quotations is allowed by Chicago jobbers on carload orders for shipment from local warehouse stocks. We quote for less than carload lots as follows:

MERCHANT PIPE.

	Black.	Galv.
⅛ to ¼ inch.....	61	45
⅜ inch	63	49
½ inch	65	53
¾ to 6 inches.....	69	59
7 to 12 inches	65	50

Minimum prices for wrought iron pipe, carload lots or greater from Chicago stocks, are as follows: ⅛ inch to ¼ inch, 55; ⅜ inch, 57; ½ inch, 59; ¾ inch to 6 inches, 64; 7 inches to 12 inches, 59. Boiler tubes from store are unchanged at 60 off for steel, 47½ for iron, and 42½ for seamless, base sizes, 2⅛ inches to 5 inches.

Wire Products.—Conditions governing transactions in wire products are very satisfactory. Fairly prompt deliveries can be given and business in good volume is coming in. Wire nails and barb wire continue to be strong features and inquiries received promise a continuance of the good demand through to the end of the year. Activity in other products indicates a well sustained consumption. We quote to jobbers, Chicago delivery, as follows:

Wire nails, $2.23; painted barb wire, $2.38; galvanized barb wire, $2.68; smooth annealed wire, $2.08; smooth galvanized wire, $2.38; polished staples, $2.33; galvanized staples, $2.63. Carload lots to retailers, five cents higher; less than carload lots, 15 cents higher.

Coke.—The situation in coke offers a decided contrast to the market condition of associated products and is very firm at the quoted prices. It is extremely difficult to obtain standard Connellsville furnace coke in the western market under $3. Cokes that are slightly off grade are proportionately much easier of obtaining. We quote for Connellsville 72-hour foundry brands $3.25 to $3.40 and for high grade standard Connellsville furnace coke $2.85 to $3 at the ovens.

Old Material.—With the railroads disposing of a quantity of scrap at good prices at one time during the past week and with an attempted short covering by a western foundry, a sharp but short-lived upward movement was developed only to be followed by a feeling rather more bearish than prevailed a week ago. While some dealers are looking for the advent of a certain large buyer into the market in the not distant future with another temporary strengthening of the market resulting, the outlook is for a quiet period in sympathy with the general market. No sales of rerollers were made at $18 and even the price of $17.75 has softened so that we now quote on rerollers $17 to $17.50. Several inquiries for relaying rails in small lots up to 1,000 tons have been made, but on wrought scrap mills are holding off apparently for lower prices. Two small railroad lists are out involving 450 tons for the Atchison, Topeka & Santa Fe and 300 tons for the Wisconsin Central. Prices remain without change as a week ago, and we quote, gross tons in the first paragraph:

Old Car Wheels	$24.50 to 25.00
Old Iron Rails	19.75 to 20.25
Rerolling rails (3 ft. and over)	17.00 to 17.50
Old Steel Rails (3 ft. and under)	17.00 to 17.50
Light Section Relayers, 45 lbs. and under, subject to inspection	30.00 to 32.00
Relaying Rails, subject to inspection	28.00 to 30.00
Frogs, Switches and Guards	15.50 to 16.00
Heavy Melting Steel	15.00 to 15.50

We quote net tons as follows:

No. 1 R. R. Wrought	$14.50 to 15.00
No. 2 R. R. Wrought	13.50 to 14.00
Knuckles, Couplers and Springs	14.50 to 15.00
Shafting	17.50 to 18.00
Iron Car Axles	23.50 to 24.00
Steel Car Axles	20.50 to 21.00
Dealers' Forge No. 1	11.75 to 12.00
Pipes and Flues	11.00 to 11.50
No. 1 Cast, 150 lbs. and less	16.75 to 17.25
No. 1 Mill	10.00 to 10.50
Mixed Busheling (Nos. 1 and 2)	10.50 to 11.00
Country sheet	8.00 to 8.50
No. 1 Boiler Cut	10.00 to 10.50
Boiler Punchings	14.00 to 14.50
Cast Borings	8.50 to 9.00
Mixed Borings, etc	8.50 to 9.00
Machine Shop Turnings	10.50 to 11.00
Railroad Malleable	15.50 to 16.00
Agricultural Malleable	14.25 to 14.75
Stove Plate and Light Cast Scrap	14.25 to 14.75
Old Iron Splice Bars	16.50 to 17.00

CLEVELAND.

Two New Boats Ordered—More Inquiry for Pig Iron.

Office of THE IRON TRADE REVIEW,
Browning Bldg., Oct. 8.

Iron Ore. — With the favorable weather thus far encountered in October, the ore is moving nicely and piles on docks are being increased, although the tonnage in store is not as great as at this time last year. Some difficulty is being experienced in procuring sufficient dock labor at the upper lake ports, the approach of the winter causing this situation. The scarcity of cars is producing some annoyance. No interest has as yet been displayed in next year's ore. While the total figures for September do not show as large a tonnage as was indicated by the earlier reports, the month's total of 6,217,653 tons is an increase of 787,993 tons over September, 1906. The season's increase over last year is now 2,408,451 tons, which practically assures the reaching of the 40,000,000 ton mark. If the present percentage of gain is maintained until the end, however, this total will probably be exceeded. The complete shipments for September are as follows:

Port.	Sept. 1906.	Per ct. of total.	Sept. 1907.	Per ct. of total.
Escanaba	833,681	17.37	642,251	11.93
Marquette	411,582	7.58	417,684	6.72
Ashland	384,968	7.09	407,572	6.56
Superior	869,678	16.02	1,155,464	18.59
Duluth	1,750,136	32.23	2,203,638	35.44
Two Harbors..	1,179,636	21.73	1,291,044	20.76
	5,429,660	100.00	6,217,653	100.00

Port.	To Oct. 1, 1906.	Per ct. of total.	To Oct. 1, 1907.	Per ct. of total.
Escanaba ..	4,270,294	15.17	4,473,417	14.64
Marquette ..	2,120,519	7.53	2,342,149	7.66
Ashland	2,636,025	9.36	2,722,331	8.91
Superior ...	4,448,174	15.80	5,571,918	18.23
Duluth	8,334,388	29.61	9,406,283	30.78
Two Harbors	6,341,357	22.53	6,043,108	19.78
	28,150,755	100.00	30,559,206	100.00

Pig Iron.—Though buyers are assiduously refraining from any next year contracting, there is an increased inquiry for iron over the balance of this year. Invariably the lots sought, ranging from 100 to 1,000 tons, are wanted as early as possible, tending to show that melters have not a great deal of iron in yards. Though the foundries are not believed to be taking on contracts for the future as briskly as they have been, usually they are urging the furnaces to maintain prompt deliveries of iron. The exception to this condition is noted with one furnace interest where a number of melters have asked that shipments be held back a month. A little spot iron has been sold in the week at the price of about $22 Cleveland. Malleable appears to be stronger than foundry iron and there is considerable inquiry for it for the remainder of the year. Feeling tactics are being tried by melters in ascertaining prices on next year's iron, and these have developed nominal quotations on the part of furnace interests. One company to such an inquiry has made a quotation of $21 valley furnace for first half delivery. There is some inquiry for spot basic but none is to be had in this market. We quote, f. o. b. Cleveland, for the remainder of the year, as follows:

Bessemer	$22.90
No. 1 Foundry	22.00 to 22.50
No. 2 Foundry	21.50 to 22.00
No. 3 Foundry	20.50 to 21.50
No. 2 Southern	22.85
Gray Forge	20.00 to 20.50

Finished Material.—The contract for the steel for two additional ore freighters was awarded by the American Ship Building Co. within the week. Though new business gener-

ally is not in larger volume than for several weeks past, a fairly active fall trade is reported by some interests. Specifications are somewhat more plentiful, the implement manufacturers being responsible to a great extent for this condition. These interests are drawing heavily upon steel bars, boiler steel and bar iron, their active manufacturing season being at hand. New structural business, made up of small orders, in the aggregate is good, but deliveries are a trifle improved. Steel bars are somewhat easier and some sizes are obtainable in from 4 to 6 weeks. A sale of 2,000 tons of plates at the regular market price, for bridge purposes, is noted, and premium business has ceased except in a few instances of carload lots for very prompt shipment. There is a steady demand for billets, several transactions in forging billets being reported. Some call is in the market for standard and light rails in small lots. Bar iron gained no strength and deliveries in as short as a week to ten days are promised by some mills. Jobbers report some increase in mill business within the week and stock trade continues good.

Coke.—The coke market shows undiminished strength, and high class brands are practically unobtainable for the remainder of the year. There is a fair inquiry, and several good sized transactions in foundry coke for the first half of 1908 have been closed within the week. For delivery the remainder of the year we quote furnace coke at from $3 to $3.15 ovens, and foundry coke at from $3.25 to $3.50 ovens.

Old Material.—The already weak situation in old material has become considerably worse, and prices have suffered in consequence. Railroad offerings of September accumulations have had a tendency to depress the market, as current sales are few and light. The B. & O. railroad, in offering a lot of 7,000 tons, has requested that the delivery period be extended to 60 days, instead of the customary 30 days, which is interpreted as an effort of the company to protect itself against expected lower prices. The Michigan Central also has a small list in the field. We have revised our prices, and quote, f. o. b. Cleveland, gross tons, as follows:

Old Iron rails	21.50 to 22.00
Old steel rails (re-rolling)	17.50 to 18.50
Old steel rails (under 6 feet)	17.50 to 18.50
Old car wheels	22.50 to 23.50
Steel boiler plate	14.00 to 14.50
Steel axles	21.00 to 22.00
Malleable iron (railroad)	18.00 to 18.50
Malleable iron (agricultural)	15.00 to 16.00
Heavy steel	16.00 to 16.50
Country mixed steel	13.50 to 14.00
Low Phosphorous	20.00 to 21.00

We quote net tons as follows:

No. 1 R. R. Wrought	$16.00 to 16.50
No. 1 busheling	13.75 to 14.25
No. 1 machine cast	16.50 to 17.50
Iron axles	22.50 to 23.00
Axle turnings	12.00 to 12.30
Machine shop turnings	10.50 to 11.00
Grate bars	14.00 to 14.50
Pipes and flues	12.50 to 13.00
Tank iron	12.00 to 12.50
Hoop and band iron	8.00 to 8.50
Sheet iron	7.00 to 8.00
Wrought drillings	10.50 to 11.00
Stove plate	14.00 to 14.50
Cast borings	10.00 to 10.50

CINCINNATI.

Market Very Dull With Some Slightly Lower Quotations.

Oct. 8.

Pig Iron.—The market continues quiet with but little change. Southern iron is more freely offered at $18 Birmingham and one of the leading producers in the south is now openly quoting on this basis. Some investment southern iron is still unsold and this can be had on the $18 schedule. Northern iron in southern Ohio is now quoted at $20.50 at furnace, which is 50 cents per ton lower than a week ago. The only other price change is in high silicon iron which is now obtainable at $28 for eight per cent at furnace in southern Ohio against $29 a week ago. There has been no improvement in buying or inquiry and no large tonnages are under consideration. The little trading that is being done is still confined to small lots mostly of the high grades. Low grades continue dull with asking prices irregular. Southern gray forge ranges from $15.25 to $15.75, and No. 4 foundry from $16 to $16.50, Birmingham.

There is no serious interest in the market for next year, and while $17 Birmingham can be done, buyers are in a waiting mood. Iron is being taken in on contracts and melters are seemingly covered for the balance of the year. It was expected in some quarters that with the beginning of the last quarter of the year it would be found that there would be some call for iron from some concerns which had not covered their requirements, but in this sellers have been disappointed. It is reported now that some melters have enough iron still due them to carry them past the first of the year and there is some decrease in the melt in this territory. This with the disposition to defer order placing is discouraging to the view that a buying movement in the near future is to be expected. On the other other hand, the situation has an element of strength in the fact that the stocks on furnace yards are not large and the iron in the hands of melters is about normal. Under such conditions, the price level for next year is a problem upon which there is considerable conjecture without well defined opinion. We quote spot iron and for delivery over the balance of this year, delivered Cincinnati as follows:

Southern Foundry No. 1	$21.75 to 22.25
Southern Foundry No. 2	21.25 to 21.75
Southern Foundry No. 3	20.25 to 20.75
Southern Foundry No. 4	19.25 to 19.50
Southern No. 1 Soft	21.75 to 22.25
Southern No. 2 Soft	21.25 to 21.75
Southern Gray Forge	18.50 to 19.00
Northern No. 1 foundry	22.20 to 22.70
Northern No. 2 foundry	21.70 to 22.20
Northern No. 3 foundry	21.20 to 21.70

Finished Material.—Specifications on contracts are fairly liberal, but new business is light. Iron bars are slightly easier in tone, but not quotably changed. Mill deliveries are better and in some lines early shipments on new orders can be obtained. In the retail line business holds up fairly well with no change in prices. Small orders are filled here at the following prices:

Angles, 3 x 3 and over, 2.15c to 2.25c; beams and channels, 15 inches and under, 2.15c; small angles and architectural channels, 2.10c base; plates ¼-inch and heavier, 2.10c; 3-16-inch, 2.20c; No. 8, 2.20c; sheets (blue annealed) No. 10, 2.30c; No. 12, 2.35c; No. 14, 2.40c; No. 16, 2.50c; box annealed sheets, Nos. 18 and 20, 2.65c; Nos. 22 and 24, 2.75c; Nos. 25 and 26, 2.80c; No. 27, 2.85c; and No. 28, 2.95c. Iron and steel bars, $2 base; boiler tubes, 62 per cent off base; turnbuckles, 45 per cent off; rivets, 3.15c base; cold rolled shafting, 45 per cent off list; steel tire, 2.10c base.

Coke.—The market is firmer in tone and in furnace coke there is more call for spot shipment as deliveries are becoming a little irregular on contracts. Foundry coke is steady with enough call to absorb the offerings of spot coke at current prices. Some complaint of a shortage of cars is to be heard which will have a strengthening tendency on the market. Prices in the leading coke producing districts are as follows:

Wise County, furnace coke.	3.00 to 3.25 per ton
Wise County, Va., Foundry Coke	3.00 to 3.25 per ton
Pocahontas Furnace Coke, prompt shipment	2.60 to 2.75 per ton
Pocahontas Foundry Coke	3.00 to 3.25 per ton
Connellsville Furnace Coke, prompt shipment	2.85 to 3.00 per ton
Connellsville Foundry Coke	3.25 to 3.50 per ton
New River Foundry Coke, prompt shipment	3.35 to 3.50 per ton
New River Furnace Coke, contract	2.85 to 3.00 per ton

Old Material.—The market is dull and easy in tone with prices in buyers' favor when there is any serious bidding. We quote dealers' prices as follows:

Old No. 1 R. R. wrought net tons	$15.50 to 16.00
Cast machine and fdy., net tons.	17.50 to 18.00

Old iron rails, gross tons	22.00 to 23.00
Old steel rails (re-rolling), gross tons	18.00 to 19.00
Old short lengths, gross tons	19.00 to 20.00
Old iron axles, net tons	23.50 to 24.50
Heavy melting scrap, gross tons	17.50 to 18.50
Stove plate, net tons	13.50 to 14.50
Wrought turnings, net tons	11.50 to 12.50
Cast borings, net tons	9.75 to 10.75
Car wheels, gross tons	23.00 to 24.00

PHILADELPHIA.

Fair Volume of Small Orders of Pig Iron—Effect of False Reports.

Oct. 8.

Pig Iron.—There is little change to be noted in market conditions during the past week. Business is quiet, but there is still a pretty fair volume of orders coming in for amounts ranging from 500 tons down, and these aggregate no inconsiderable total. They are almost entirely from foundrymen for prompt shipment and show that melters are carrying very small supplies. Prices show little change, as they cannot go much lower without incurring losses, and furnace men are pretty well agreed that rather than do that they will shut down their stacks. It is indicative of the large amount of business the furnaces are still doing that only one has been closed in eastern territory for repairs, notwithstanding the announced policy of the owners not to operate them at a loss. Inferior irons have been disposed of at some very low figures, but for standard brands makers hold firmly for not less than $20 for No. 2X foundry, and sales range from that figure up to $20.50. For 1908 business very slight concessions are made. Prices may be quoted as follows:

No. 1X Foundry	$21.00 to 21.50
No. 2X Foundry	20.00 to 20.50
No. 2 Plain	19.25 to 19.75
Standard Gray Forge	18.25 to 18.75
Basic	18.50 to 19.00
Low Phosphorus	27.00 to 27.50

New Material.—New business is small, and the mills are kept in operation largely on old orders. The pessimistic accounts of the trade sent out from Pittsburg are having a depressing effect, and while no such extensive shut-downs and discharges of men have taken place in this territory as are reported from that city, the effect of such statements is naturally somewhat disheartening. Reports from such large establishments as the Baldwin Locomotive Works, the Pencoyd Works, the Midvale Steel Co. and Cramp's ship yard show that they are all extremely busy and expect to be so for some time, but some smaller establishments are not so fortunate. No change has been made in prices, as it is felt that a reduction would be of no avail in bringing business, and they remain as follows: Beams, channels and angles, according to specifications, 1.85c to 1.90c; refined iron bars, 1.75c to 1.80c; steel bars, 1.75c to 1.85c; plates, 1.85c to 1.90c.

Old Material.—The market continues almost stagnant, the only changes being in the direction of lower prices. Buying is small and for spot shipments. The reduction in the price of pig iron has naturally lessened the demand for scrap. Prices may be quoted as follows:

Old steel rails	17.50 to 18.00
No. 1 steel scrap	16.00 to 16.50
Old steel axles	20.00 to 21.00
Old iron axles	27.00 to 28.00
Old iron rails	19.00 to 20.00
Old car wheels	22.00 to 23.00
Choice scrap R. R. No. 1 wrought	17.75 to 18.25
No. 1 yard scrap	16.00 to 16.50
Machinery scrap	18.50 to 19.00
Low phosphorus scrap	20.50 to 21.00
Wrought iron pipe	14.00 to 14.50
No. 1 forge fire scrap	13.75 to 14.25
No. 2 forge fire scrap, ordinary	10.00 to 10.50
Wrought turnings	13.25 to 13.75
Axle turnings, heavy	14.00 to 14.50
Cast borings	12.00 to 12.50
Stove plates	15.00 to 15.50

NEW YORK.

Concessions Made on Pig Iron—Heavy Municipal Work in Brooklyn.

Office of THE IRON TRADE REVIEW,
Room 1005, No. 90 West St., Oct. 8.

Pig Iron.—The eastern pig iron situation is without feature, unless the absence of any sizable inquiries can be classed as such. The beginning of the current week was productive of even less inquiry than the week previous, and producing interests are again in a position where they have little to do except figure on the time when the long-deferred buying movement can be expected to begin. That it must open before long is generally argued, because stocks in melters' yards were never lower and there is plenty of hand-to-mouth buying. One eastern interest, a member of pig iron association, however, has succumbed to the desire for a well-filled order book and has taken on contracts for considerable foundry iron at prices well under the market level, which is about $19.50, furnace, for No. 2X foundry. Several thousand tons of foundry iron have been disposed of and some additional sales of basic total a fair tonnage. Odd lots of malleable are going at $20.50, furnace. Pipe concerns have also been moderate buyers during the week under review, and can be expected to continue in the market, as their purchases are now chiefly for early requirements. Some British iron is still going to Canadian plants.

Reports of greater activities are coming from the Birmingham district. The head of one of the largest southern producers of iron reports a number of sales of 1,000-ton lots for this year's delivery, at the full price of $18.50, Birmingham. Stock piles, he adds, are badly depleted, as is evidenced by the increasing number of small, filling-in orders. As yet, however, there is no buying for 1908 from the southern district, and very little from northern furnaces.

We quote tidewater prices, as follows:

Northern Foundry No. 1	$21.00 to 21.50
No. 2X Foundry	19.75 to 20.25
No. 2 Plain	19.00 to 19.50
Malleable	21.00 to 21.50
No. 2 Southern Foundry	22.00 to 23.00
Basic	18.75 to 19.00

Ferro-Manganese.—The market is unchanged from that reported a week ago, $55 to $56 for early shipment and $53 to $54 for later delivery, these prices being at tidewater. Current business is not heavy.

Finished Material.—Municipal work shortly to be undertaken in Brooklyn is now the center of attention. Eventually an enormous tonnage of steel will be required in connection with the construction of the Fourth Avenue & Coney Island subway, on which the Public Service Commission has just decided to ask for bids, adopting the plans prepared by the Rapid Transit Commission, now out of existence. The estimated cost of this work is $23,000,000 to $25,000,000, and in the long run perhaps $15,000,000 additional will have to be spent for equipment. A bond issue of $10,000,000 is to be floated to provide for the acquisition by the dock department of a long stretch of Brooklyn water front and to cover early contracts in connection with the building of the proposed new dock system. Plans have already been prepared for one large steel pier shed. Another issue of $1,350,000 is to meet the city's share of the expense involved in the removal of railway grade crossings in South Brooklyn. Though these operations will probably extend over the next ten years, they will annually develop heavy requirements of steel.

The Reading railroad has let contracts with L. F. Shoemaker for the construction of a 250-foot, four span steel bridge over the west branch of the Brandywine at Coatesville.

Structural lettings in this district have been very light. The American Bridge Co. is taking on business only at the rate of about 25,000 tons a month, considerably less than half its production rate. Typical of the season, however, is the fact that numerous anticipations of contracts are being requested with no cancellations or delayed shipments. The King Bridge Co. has taken about 600 tons of bridge materials for the Big Four. Cast iron pipe is extremely quiet, interest naturally centering in Cuba, where contracts are pending for 8,000

tons with four or five times that amount in prospect. No lettings however are reported

The Maryland Steel Co. has been awarded contracts by the Isthmian Canal Commission for supplying 4,825 tons of steel rails, at $153,193, delivery seventy-five days, 2,800 kegs of spikes, and an assortment of frogs and switches. The leading interest secured an order for 12,000 tons of rails for the Manchurian road, 15,000 tons still pending, with about 10,000 tons in prospect for China and Manchuria. An eastern interest has taken a supplemental order of 2,000 tons for the Hartford line and announcement was recently made by the Illinois Steel Co. of a 6,000-ton letting to the Santa Fe.

The general contract for the Madison avenue bridge in this city has been taken by J. C. Rodgers, but the steel required, about 2,300 tons, has not yet been placed. The American Bridge Co. will furnish the structural materials for the Corn Products buildings at Summit, Ill., under an arrangement made when the project was up originally; the tonnage is not yet determined. In this immediate district, the demand for almost all lines of finished products is light, but manufacturing interests report October as opening well throughout the steel list, with materials more active and stronger sentimentally because of the promised shortage of iron ore. There is continued pressure for delivery of billets and one interest reports being offered premiums for sheet bars.

We quote as follows:

Angles, 3 to 6 inches x ¼-inch and heavier, 1.86c; beams, 3 to 15 inches, 1.86c; tees, 3 x ¼-inch and heavier, 1.91c; plates, carloads, tank, 1.96c; marine boiler, 2.26c; bar iron, 1.76c; soft steel bars, 1.76c; sheets, No. 28, black, 2.60c.

Old Material.—The market is still weak, though slightly more active than a week ago. Interests which loaded up on scrap at higher prices are now beginning a quiet campaign to get rid of their accumulations, and the result may be somewhat lower prices. Rerolling and relaying rails are in lessened demand and are noticeably lower, while heavy steel has shared in the decline. We quote New York delivery, gross tons, as follows:

Old iron rails	$24.50 to 25.00
Old steel rails, rerolling	16.00 to 16.50
Relaying rails	24.00 to 26.00
Old car wheels	22.50 to 23.00
Old iron car axles	24.00 to 24.50
Old steel car axles	19.00 to 19.50
Heavy melting steel	13.75 to 14.00
No. 1 railroad wrought	16.00 to 16.50
Iron track scrap	15.00 to 15.50
Wrought pipe	12.00 to 12.50
Cast borings	10.00 to 10.50
Wrought turnings	11.50 to 12.00
Heavy cast scrap	16.00 to 16.50
Railroad malleable	15.00 to 16.00
Agricultural malleable	15.00 to 15.50
Stove plate	13.50 to 14.00
Grate bars	13.00 to 13.50

ST. LOUIS.

Only Orders for Small Lots of Pig Iron—Coke Is Strong.

Oct. 7.

Pig Iron.—Practically no new business developed last week, leaving the market in about the same condition as last reported. Orders are being received covering single carload lots to 100 tons for prompt shipment as low as $18, and as high as $18.50 for No. 2, Birmingham basis. No. 1 is rather hard to get, and is commanding a price as high as $19.50, Birmingham basis, for prompt shipment. Very little business is being done for the first quarter or half of next year, and $17.50 is the minimum price quoted in this territory for that delivery of No. 2, f. o. b. Birmingham.

One St. Louis firm reports a more serious condition in the matter of car shortage, while others insist that the car supply is good and that shipments are coming forward in a satisfactory manner.

Some melters have asked furnace men to defer delivery on contracts, but this condition is offset by others who request that their shipments be anticipated.

Our quotations for prompt shipment, f. o. b. Birmingham, are as follows:

No. 1 Southern	$18.50 to 19.00
No. 2 Southern	18.00 to 18.50
No. 3 Southern	17.50 to 18.00
No. 4 Southern	17.00 to 17.50

Coke.—Business is reported as exceptionally good last week. Melters have been contracting for immediate and future deliveries, and as a rule they feel satisfied that today's prices are the lowest that will prevail during the remainder of this year and the first quarter of next year. Some foundrymen are making contracts for shipment over one year, commencing immediately. There is not much demand for furnace coke, and practically no inquiry for smelter fuel.

Our quotations continue as follows: For 72-hour Connellsville coke, $3.50 to $3.75; furnace coke, $2.75 to $3.10; smelter, $1.85 to $2.15, all f. o. b. ovens. The freight rate to East St. Louis is $2.80, and to St. Louis, $2.90.

Steel.—W. A. Tyrrell, architect, has made plans for three steel buildings, 100 x 96, 230 x 96 and 75 x 410 feet for the Continental Portland Cement Co. of St. Louis. The buildings will all be one story and will be erected twelve miles from St. Louis, in St. Louis county. Approximately 600 tons of steel will be used in the construction work. Bids have been asked for and the work will be rushed to completion as rapidly as possible.

Old Material.—Conditions are unchanged since last report. Our quotations follow:

	GROSS TONS
Second-hand relaying rails, according to time of delivery	$29.00
Steel rails (less than 3 feet)	15.00
Car wheels	24.50
Re-rolling steel rails	17.00
Heavy melting steel	15.00
Country steel mixed	12.00
Iron rails	22.00
	NET TONS
No. 1 R. R. wrought	16.00
No. 2 R. R. wrought	15.00
Iron splice bars and fish plates	17.00
Iron car axles	24.50
Steel car axles	19.00
Iron shaftings (3 to 6 inches)	18.00
Country wrought	12.00
Locomotive tires, smooth inside	15.00
Pipes and flues	12.00
Heavy machinery	15.00
R. R. cast (less than 300 pounds)	14.50
No. 1 Busheling	13.00
No. 2 Busheling	12.00
Boiler sheet and rings	12.00
R. R. cast borings (free of inferior quality)	10.00
R. R. wrought turnings	13.50
Machine shop turnings (free from brass)	11.00
Railroad malleable	14.00
Agricultural malleable	14.00
Cast stove plate	11.00

BIRMINGHAM, ALA.

Pig Iron Dull, But Furnaces Not Trying to Push Sales.

Oct. 7.

With the iron market in the southern territory still dull, the manufacturers are not making any effort to push out their product. If the prevailing prices can be obtained, sales will be made, but no concessions are being offered, so confident are the producers that conditions are to change in the near future. There are a few small lots being sold now for delivery during the last quarter of the year. This product is quoted at between $18 and $18.50 per ton, No. 2 foundry. Some inquiries are being received for iron to be delivered during the first half of the coming year. These inquiries though are not developing into business very rapidly. As far as can be learned, no quotations are being made for delivery during the coming year under $17 per ton.

BRITISH IRON MARKET.

Pig Iron Situation Much Improved—Stocks Still Further Reduced.

Office of THE IRON TRADE REVIEW,
Prince's Chambers, Corporation St.,
Birmingham, Sept. 28.

The week has been decidedly more satisfactory in regard to pig iron. There have been some fluctuations, and a distinct falling back since Thursday, but, as the price yesterday was 55s 5½d ($13.57) that was a clear ad-

vance of 1s on the figures of a week ago. There is much more buying, and some inroads have been made into the Cleveland stores. The Cleveland warrants now stand at 154,382 tons, and the withdrawals since the end of August amount to 28,750 tons. Other stocks have reduced: West Coast, 2,500 tons, Scotland 263 tons. The make is so fully bought that all buyers have to go to the warrant stores for prompt deliveries. The East coast hematite market continues unsatisfactory, owing to the rather poor prospects for ship building. As a rule, no business is being transacted beyond the end of the year, but there has been so little buying lately, while consumption of pig iron has been kept on a large scale, that very considerable inroads must be made into the remaining stocks during the last quarter of the year. The Midland districts such as Northampton and Derbyshire have a steady demand and prices are very well maintained, though, as compared with a month ago, there has been a little giving way. It is recognized that the United States is quite off the market as a buyer, and continental dealers are taking hundreds of tons where formerly they took thouands. But there is every probability not only of a good autumn trade, but of a further steady depletion of stocks.

BUFFALO.

Buying For Prompt Delivery Only—Policy of Caution Prevails.

Oct. 7.

Pig Iron.—Buying is emphatically of the emergency type, and early delivery orders are the only ones that buyers feel it wise to place; still, current business, coupled with old contracts, seems to keep furnaces well supplied with shipping instructions.

Little or no purchasing for delivery after Jan. 1 has been done as yet. Within a month consumers will be prepared to face the question of their 1908 needs, and will most likely at that time have sufficient data for the purpose. At present, both consumer and producer believe in caution.

Most of the leading melters are not stocking up at all and it is very evident that few if any of them will follow the dictations of one or two furnaces that have been promiscuously circularizing the market with quotations that bear evidence of having been based on miscalculation. However, it is readily asserted that the advent of a good buying movement will cause considerable steadiness instead of the present wild quotations. Although dullness has pervaded the market for some time, a general livening u pis now perceptible, and a feeling of firmness among the furnaces is noted.

There are several good inquiries reported for Bessemer from concerns whose requirements are running above their expectations, but there is little of the iron obtainable. However, it is confidently anicipated that some good sales will be made before the current month expires.

Many inquiries for small lots for immediate shipment are taken to indicate that the heavy demand for castings is falling off considerably. Foundrymen say that wihle they are running to capacity at present, the end is so near that they are in no mood to contract for large tonnages.

In a few instances in the following scale of prices the figures may be a little high, but in view of the current wild and ragged quotations, it is a difficult matter to pin prices down to a firm base. However, we quote for fourth quarter as follows:

No. 1X Foundry	$21.75 to 22.00
No. 2X Foundry	21.00 to 21.50
No. 2 Plain	20.75 to 21.25
No. 3 Foundry	20.50 to 20.75
Malleable Bessemer	22.00 to 22.50
Gray Forge	20.00 to 20.50
Charcoal	27.00 to 27.50

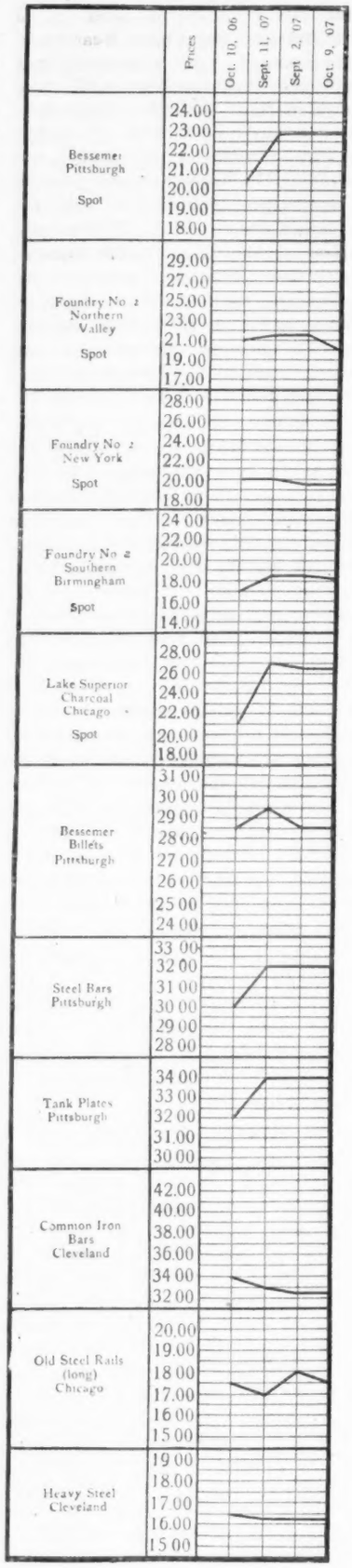
METAL MARKET.

CHICAGO.

Oct. 9

The metal market is generally dull, the only activity being in copper. Prices have been shaded from last week's level on copper and brass, but are holding firm on antimony despite the slow movement. We have revised our prices and on carload lots unless otherwise stated, quote as follows: Lake copper, 16c to 17c; castings, 15¼c to 15½c; pig tin, 38c to 38¼c ;spelter, 5½c. Pig lead, desilverized, 5c to 5.10c in 50-ton lots, corroding, 5.25c to 5.35c, in 50 lots; car lots, 2¼c per 100 pounds higher. Sheet zinc, 7.50c, list f. o. b. LaSalle in car lots of 600-pound casks. Cookson's antimony, 14c to 15c; other grades, 12½c to 13c. In old metal there is very little being done. We record a number of price changes as follows: Copper wire, 12c; heavy copper, 12c; light copper, 11c; heavy red brass, 11½c; heavy yellow brass, 9c; light brass, 7c; No. 1 red brass borings, 9c; No. 1 yellow brass borings, 7¾c; brass clippings, 9c; tea lead, 3½c; zinc scrap, 3¾c; zinc clippings, 3¼c; tin foil, 25c; tin pipe, 30c; pewter, 21c; aluminum clippings, 28c; aluminum cast, 25c; electrotype plates free from wood, 4½c; electrotype dross, 2¼c to 2½c; electrotype plate, 5c; stereotype dross, 3c; prime slab zinc, dross, $72 to $74 per ton.

PRICE CHART.



LESS EARNINGS

Shown By the Crucible Steel Co. of America For Past Year.

The seventh annual report of the Crucible Steel Co. of America for the fiscal year ended Aug. 31, 1907, shows earnings for the period of $2,672,160, after deducting all expenditures for operation, repairs, interest, etc. This sum is $229,680 less than the earnings of the preceding year. The charges made against this earning total are shown in the following summary of financial operations.

NET RESOURCES.	
Earnings for year	$2,672,160
Deduct Div. 6 per cent Pref.	1,466,190
Undivided earnings	$1,205,970
Sale property	53,900
	$1,259,870
PAYMENTS AND CHARGES.	
Property and construction	$ 683,090
Purchase Park Steel Co. stock	215,300
Purchase Interest Howe, Brown & Co.	173,896
	$1,072,282
Bonded debt paid	250,000
Revising inventory value	125,000
	$1,447,286
Excess payment of charges over resources	$ 187,416
Accts. payable in excess accts. receivable	$635,454
Increase current assets	$509,554
	$125,900
Decrease in cash	61,516
	$187,416

The balance sheet of the company, Aug. 31, 1907, shows total assets of $54,803,951.

In discussing the state of the company's property William G. Park, chairman of the executive committee, and Frank B. Smith, president, say in part as follows:

The expenditure on property account during the year has been unusually large and amounts to $1,072,286. This was partly due to the purchase of the outstanding stock of the Park Steel Co. at a cost of $215,300 and the purchase of the outside interests in the Howe, Brown & Co., Ltd., property at a cost of $173,896.

At the close of the fiscal year ended Aug. 31, 1906, there was still $215,300 of the Park Steel Co.'s stock outstanding, all of which has been purchased at par and interest, and charged to property account, during the past fiscal year. The Park Steel Co. (the New Jersey corporation) has been liquidated and its stock cancelled. All its assets now belong to the Crucible Steel Co. of America.

Although the Crucible Steel Co. of America owned the stock of Howe, Brown & Co., Ltd., there were outside interests in the real estate which, to acquire, necessitated partition proceedings. These proceedings have been completed and these interests obtained at a cost of $173,896, which has been charged to property account.

During the year the property of the Beaver Falls Steel Works, which has never been operated by the company, was disposed of for $53,900 net, thought to be a fair market price, and the sum credited to property account.

During the year it was decided not to use the new building erected on the land purchased at Fifty-First street for a railway spring factory, but to use it as an addition to the Crescent works. A portion of the Anderson-DuPuy plant at McKees Rocks has been refitted for the spring factory, and is now about ready to be put in operation.

The Thirty-sixth street puddle forge, consisting of 20 double furnaces and the machinery necessary to operate same, has been completed and is now in operation, insuring the company an ample supply of muck bar. A 30-ton open hearth furnace has also been built at this plant.

New crucible melting furnaces have been added to both the Crescent and Sanderson plants, a 15-ton open hearth furnace to the Atha plant, and a 10-inch mill with new engine, machinery and building, to the La Belle works.

The company will enjoy the benefits of these improvements during the coming year.

PURCHASED BY CORPORATION.

The United States Steel Corporation, through its subsidiary, the American Steel & Wire Co., has purchased the business and plants of the National Steel & Wire Co., New Haven, Conn., which went into the hands of receivers Dec. 30. The assets of the company are $2,500,000 and the outstanding capital stock $7,400,000. The purchase was made at receiver's sale in New Haven, Oct. 1, and the bankruptcy proceedings were terminated by the transaction. The National company operated two plants in New Haven, originally valued at $2,500,000. The price at which the property was bid in was $650,000.

Officials of the American Steel & Wire Co. during the past week have been going over the properties purchased, as it is under the management of this subsidiary of the corporation that they will be operated. This will not be possible for some little time, however, as considerable repairs will be necessary, owing to the fact that the plants have been idle for about a year, and there is always some delay in the formal transfer of properties so disposed of.

Walter B. Snow, formerly with B. F. Sturtevant & Co., has opened an office at 170 Summer street, Boston, as publicity engineer. He proposes to conduct the publicity department of a limited number of non-competitive clients, and to render special service to others in general advertising, catalog making, technical writing, etc.

All of the three furnaces of the Sheffield Coal & Iron Co., Sheffield, Ala., were inactive Oct. 1. No. 1 stack is out indefinitely, No. 2 was blown out Oct. 6, and No. 3 was blown out Feb. 28 for relining.

BOILER MAKERS MEET.

The American Boiler Manufacturers' Association met in Atlanta, Oct. 8. Business sessions were held at Assembly hall, the first being held at ten o'clock Tuesday morning. The meeting was called to order by President M. F. Cole, and welcomed by Gov. Hoke Smith, replies being made by E. D. Meier and W. H. S. Bateman. The president's annual address followed. Business sessions were held Tuesday afternoon, Wednesday morning and will be held Thursday morning and afternoon. Wednesday afternoon a barbecue was tendered the convention at Ponce de Leon cue grounds by the R. D. Cole Mfg. Co. An informal reception was held Wednesday evening at Assembly hall. The annual banquet was set for Thursday night. The menus were gotten up in the parlance of the boiler shop, and the following toasts were listed, E. D. Meier acting as toastmaster. "The Southern Manufacturer," S. L. D. Jones; "The Ladies," John Temple Graves; "Air for Various Purposes," W. O. Duntley; "The Elastic Limit," Hewlet A. Hall; "The Southern Negro," Judge A. E. Calhoun; "Boilers Past and Present," John T. Main.

SHORTAGES DISCUSSED.

The October meeting of the Philadelphia Foundrymen's Association, held on the evening of Oct. 2, was mainly devoted to social recreation, but considerable attention was given to a letter from the New England Foundrymen's Association regarding shortages in shipments of pig iron and coke. It was stated that the losses must be due either to mistakes in weighing at the point of shipment or to loss in transit. In order to ascertain which is the true cause it was suggested in the letters that a committee be appointed to co-operate with other foundrymen's associations in an effort to agree upon a uniform system of weighing. This suggestion was approved by the Philadelphia Association, and a committee will be appointed to take the matter up.

Damage Was Slight.—Owing to an error made by the telegraph company in transmitting a message from Buffalo last week, the damage resulting from a fire at the car shops of the Lackawanna Steel Co., Buffalo, was stated to be $250,000, although the message was written $25,000. We are informed by the company that even the estimate of $25,000 is too high and that the fire will not in any way interfere with the operations of the plant.

THE IRON TRADE REVIEW

Devoted to Iron and Steel Manufacture and to the Machinery, Metal-Working and Foundry Trades

PUBLISHED EVERY THURSDAY BY
THE PENTON PUBLISHING CO.
CLEVELAND.

BUFFALO.....932 Ellicott Sq.
CHICAGO.....1362 Monadnock Blk.
CINCINNATI.....First National Bank Bldg.
NEW YORK.....1005 West Street Bldg.
PITTSBURG.....521 Park Bldg.
DULUTH.....411 Providence Bldg.

Subscription, United States and Mexico, $3.00 per annum. To Canada and Foreign Countries, $4.50. Advertising Rates Furnished on Application.

Change of advertising copy must reach this office ten days preceding date of publication.

The Cleveland News Co., will supply THE IRON TRADE REVIEW through the regular channels of the American News Co.

European Agents: The International News Company, Breams Building, Chancery Lane, London, E. C., England.

ENTERED AT THE POST OFFICE AT CLEVELAND, AS SECOND CLASS MATTER.

PRINTED IN AN OPEN SHOP

October 10, 1907.

PHOSPHORUS AND RAIL STEEL.

While the text of the report by the American Railway Association's rail specification committee will not be made public until the semi-annual meeting of the association at the close of this month, it is generally accepted that the report will call for a reduction in the phosphorus in Bessemer rail steel from 0.10 to 0.085 per cent, with a 25 per cent discard.

This reduction the rail manufacturers properly designate as impossible. On the face of it, the reduction does not seem great, but the rail mills probably know a good many things which the railroad experts did not know, among others how large a tonnage of Bessemer steel has been made in the past twelvemonth with a phosphorus content quite above the 0.10 per cent which the railroads regard as an established point from which to base improvement.

The great bulk of the ores which are used in making Bessemer steel are ores which run just a little above or just a little below the phosphorus content which will make a steel containing 0.10 per cent phosphorus. Of course there are ores which, used alone, would make a steel well under 0.085 per cent. That is not the point; the question is "how much steel would they make?" Last year 3,705,642 gross tons of Bessemer steel rails were made. With a 25 per cent discard, and other losses thereafter, this would involve considerably more than 5,000,000 tons of ingots to be produced, with the reduced phosphorus, as the discards could hardly be put back into the converter, and would have to be rolled into some other form. It is quite doubtful if there is ore to make this tonnage, but even conceding that there is, nothing would be left to improve the remaining ores, which could not by themselves be used at all for Bessemer steel. Last year about 8,000,000 tons of Bessemer steel ingots were made, which did not go into rails. This industry would be wiped out of existence.

Various expedients might be resorted to, in order to bring down the phosphorus. Some washed metal could be used, portions of very low phosphorus steel could be brought from basic open-hearth departments, and so on. All such expedients would involve a large addition to the cost of manufacture, so large as to preclude their adoption if the idea of the Bessemer rail mills continuing to make Bessemer rails be retained. They would be making a new kind of rail altogether, and would have to charge more for it than is charged for an open-hearth rail.

It may have appeared easy to the committee of the American Railway Association to adopt this lowered phosphorus limit, as it was but following specifications already adopted or proposed by the American Society of Civil Engineers and the American Railway Engineering and Maintenance of Way Association, but there has been time for the impossibility of the restriction to have become apparent. What the railroads want is good rails, and there has been so much ground for improvement that it does not seem reasonable that so much should be made of phosphorus. Perhaps that is the difficulty; perhaps there has been a lack of knowledge on the part of the railroad experts, or perhaps—let it be whispered only—just a slight lack of frankness on the part of the rail mill experts, as to what might be expected in the way of improved quality from improvement in heat treatment, discards, and other matters connected with making Bessemer steel rails.

If the American Railway Association maintains the position understood to have been taken by its committee, it looks as though nothing would come of the matter but filing the specifications for reference and allowing the railroads and rail mills to go ahead and contract for rails upon whatever terms seem best to them individually. The time may come when the principal railroads of the United States will be paying a premium for Bessemer rails; recent developments are a step in that direction.

REMOVING A DANGER.

The recent absorption by the United States Steel Corporation of a wire company which had gotten into financial difficulties is a practical illustration of the theory that the formation and success of the Steel Corporation has removed, or largely mitigated, one of the great dangers of the steel trade. In every depression, and even in times of moderate prosperity, there have been manufacturing concerns which failed for one reason or another and the existence of the plants thus left has constituted a menace. The promoter would come along, raise a little "working capital," lease the plant, lose the money, and further disorganize the trade. It has always been felt that if there were some power to prevent this bankrupt competition it would be for the good of all. The United States Steel Corporation has supplied that power. In the earlier days of consolidation, there was an incentive, in some lines, to build competing plants merely for the purpose of selling out. That incentive has been pretty well removed, but the influence for forestall-

ing bankrupt competition remains, and all elements in the trade may well be thankful for the fact.

A JUST AMENDMENT.

At the next session of congress, there will doubtless be a flood of proposed amendments to the interstate commerce law. One which, it seems to us, has a large amount of merit is aimed to prevent any sudden change in interstate freight rates without first giving the shipper an opportunity to be heard. Under the present procedure, railroad companies simply file their tariffs, which become effective in 30 days. If the shippers feel aggrieved, they file a complaint with the Interstate Commerce Commission and the courts. In Canada, all freight tariffs must be approved before becoming effective, and that seems to be much the better method, for in this country the delays amount almost to a denial of justice. In some cases, 15 months have elapsed after the complaint has been filed before a decision has been rendered. During all this long period, shippers must suffer. When a rate has been in effect for several years, the railroad cannot suffer seriously by its continuance pending investigation. It seems to us there can be no reasonable objection to the passage of the proposed amendment.

FALSE REPORTS.

(Continued from page 567.)

iron to Bessemer. One interest has already made this change, and others will do so if sufficient inducements are offered.

Structural Material

New business in structural material is light, but the demand for shipments on accumulated orders was never heavier, and October will see a new production record for the American Bridge Co. The tightness of the money market has interfered with the carrying out of many building operations, but specifications are nevertheless heavy. An immense amount of new construction is being planned by the city of Brooklyn, including heavy expenditures for docks, subway, grade crossings and other improvements. Chicago mills are well supplied with plate orders and other interests are busy, but deliveries have much improved. Orders for plates for two more lake vessels have been placed. An order for 6,000 tons of cast iron pipe for Los Angeles has been awarded the principal producer.

COKE DEAL PENDING.

A deal is now pending for the purchase by the H. C. Frick Coke Co., of the Whitney one-half interest in the Hostetter-Connellsville Coke Co., Pittsburg. The Frick company now owns one-half interest in this company which has four square miles of coking coal lands in the heart of the Connellsville region. The deal has been under negotiation several times during the past few years but will probably be closed during the present month. The consideration mentioned for the Whitney one-half interest is $3,500,000.

Explosion Kills Workmen.—An explosion of hot metal at the car wheel plant of the Standard Steel Car Co., Butler, Pa., Oct. 6, has so far resulted in the death of 13 workmen who were caught in the deluge. Several more are expected to die as a result of their injuries. The accident was caused by the upsetting of a two-ton hot metal pot in front of a cupola. The damage to the plant was slight.

Plant Not Sold.—When the plant of the Providence Steel Casting Co. was offered at trustee's sale, Oct. 2, no bidders were found at the knock-down price of $65,000, which was the lowest figure at which the plant could be sold under its appraisement. It will probably be re-appraised and again offered for sale in the near future. It is stated that the plant, with equipment, cost between $100,000 and $125,000.

Select Meeting Date.—The Employer's Association of Cleveland has decided to hold its first annual meeting Oct. 14 at the Hollenden hotel. The session will be in the form of a smoker and refreshments will be served. Men of national prominence will be present to address the assemblage upon topics of interest. The reports of the president, secretary and counsel for the association as to the work accomplished in the past will be presented.

No. 3 Keystone furnace of the E. & G. Brooke Iron Co., Birdsboro, Pa., was blown out Sept. 7 for repairs.

HANGING ROCK REGION.

Little Interest in Buying For Next Year—Higher Prices Are Hoped For.

Ironton, O., Oct. 8.—Pig iron producers in this district report very few orders taken during the opening days of the month for delivery during the first quarter of 1908 and take a less roseate view of ready sales and large profits than they did earlier in the season. All the stacks in the district are in operation, however, and the furnacemen are hopeful of an ascendency in prices by the first of the year.

The blooming mill of the Portsmouth Steel Co. was closed down for a few days on account of the necessity for repairs to the engine. The three-high mill has resumed after a short suspension for needed repairs.

Patton & Seymour have opened a pipe foundry at Catlettsburg, Ky. The first cast was made with satisfactory results. The present capacity of the plant is only two tons daily, but the output will shortly be doubled. The first order for 90 tons was placed by the Catlettsburg Water Co. James Davidson is general foreman of the plant.

Five thousand dollars' worth of the bonds of the United States Engine Co. were offered for sale at public auction at Parkersburg, W. Va., last week by the trustee, the Union Trust & Deposit Co., which had been given the bonds as a pledge for a $5,000 loan to H. F. Boyd, president of the company. The only bidders were representatives of the engine company and the trustee and after $8,065 had been offered, the sale was adjourned for 30 days.

A meeting of the stockholders of the Parkersburg Iron & Steel Co. was held last week and the officials and directors inspected the company's plant at Beechwood. The plant is running full time and employing more men than at any time in its history. Among those who attended the annual meeting were: L. A. Meyran, F. C. Niemany, H. F. Duncan and H. S. Snyder, of Pittsburg, and Edward Nieman, of Parkersburg.

By order of court, there will be sold at Lexington, Ky., Oct. 14, 11,000 acres of land largely underlaid with minerals, in Grayson county, Ky., not far from Ironton. It was the property of the Lexington & Carter County Mining Co. and the order of sale was secured by the Columbia Finance & Trust Co.

GREAT BENEFITS.

(Continued from page 567.)

committee consisting of H. E. Field, Benjamin Fuller and Samuel Sleeth to take action upon this request of the New England Association.

Mr. Scott's Address.

Mr. Scott: Some time ago I was called upon by your association to tell what good the dry air system had done for the blast furnace men in the uniformity of product. This is not only what you gentlemen are looking

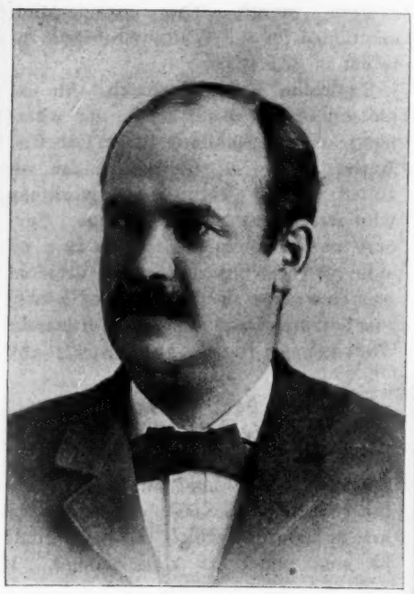
H. E. Field, President.

for, but what we are all after—uniformity. Uniformity in pig iron is something we have all been trying to get, but with varying success. It would go easier with all of us if we had more uniformity.

I want to take you back to the iron ore and the coke. We know that Connellsville coke is different today from what it was 20 years ago. Iron ores, particularly iron ores from the Lake Superior district, are entirely different today. I remember 20 to 25 years ago iron was made in our Pittsburg district on 1.6 tons of ore. None of the ore brought down from the Lake Superior regions carried more than 4 per cent silica; did not carry more than 3 or 4 per cent in water, and a great deal carried no water at all except that in combined state. Today we are getting ore from the Lake Superior regions carrying 13 to 14 per cent water that is less than 50 per cent in iron, and is taking two tons of ore to make one ton of iron in many of the furnaces of the Pittsburg district. Some of them require even more than two tons of ore to the ton of iron. In other words, for every ton of iron you make, of 2,240 pounds, you consume two tons of ore, and are therefore using that much more gangue which we must get rid of. You get that much irregularity in your blast furnace. Therefore we must use more coke to consume that gangue—we must use more limestone, and limestone is the most refractory material put into the blast furnace. Everything else melts easily but the limestone. Of course that limestone comes in in connection with the silica, because silica is not melted there until in connection with the limestone. You use more coke to reduce that.

Coke Not So Good.

Our coke today is not as good as it used to be. It is very much higher in sulphur; it is very much higher in ash, and therefore it requires more of it. And the more we use the more sulphur we get, coke giving us the greatest amount of sulphur we get from any material in the blast furnace. And we know that sulphur is the greatest enemy of iron no matter where it is found; in the puddler's hands, in the foundryman's hands, or in the steel maker's hands. They have no use for sulphur, and sulphur will condemn any iron today, no matter for what use. You can eliminate any other element more easily. Sulphur can of course be eliminated, but only at great expense. Also the



F. H. Zimmers, Secretary.

larger the volume of coke the greater your variation is going to be in pig iron. It will be harder for the furnacemen to get a uniform product.

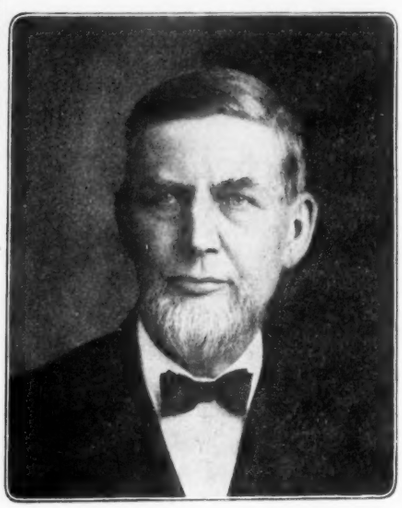
In this climate there is no one but knows the benefit of dry air. You take for instance atmospheric humidity. You mop your forehead and feel played out. Your blast furnace does the same thing. You lose your energy—the blast furnace loses energy. What is the reason? Simply because you are pumping water into that furnace, and where there is appreciable water in the furnace it will lower your silicon and raise your sulphur as well as change your graphitic carbon into combined carbon. It makes poor iron. We want to overcome that, but water is one of the elements you cannot decompose unless at the expense of silicon. In order to realize the decomposition that must take place inside of the blast furnace when you are pumping air saturated with water—last year in the month of August, and at the beginning of September, we pumped as high as 11 grains of water to the cubic foot. When you know that a great many of the modern furnaces today are pumping as high as 55,000 cubic feet of air a minute and 11 grains of water to the cubic foot, you can figure the tons, yes 20 to 40 tons of water per day pumped in. That water pumped into the blast furnace must be decomposed. How? By the carbon there. If we pump that water in, we are robbing our furnace of heat. If we did not rob the furnace of heat by the pumping in of water, we would have that fuel to reduce the oxide of iron from which we get the pig iron.

The Engineer and Chemist.

Another thing. Think what the engineer has done for the blast furnace, for the steel man in the manufacturing end by the introduction of machinery for the handling of large quantities of material. Think what the chemist has done for the furnaceman; enabled him to sample his materials, his ore, his coke, his limestone. He can have analyses before it is brought from the quarry, or he could have his coal analyzed to learn if all right.

But when it came down to the handling of the air, that was entirely different. He was at sea when it came to that. He was not only at sea, but in Pittsburg he has a variation in the atmosphere every hour. We keep close tab on that. It is kept for the full 24 hours. We know exactly what the moisture is in the atmosphere every hour in the day.

Now we are back to dry air. We take that air and dry it—we freeze



J. S. Seaman, Treasurer.

the water out of that air; that is what we do. From eight grains, on the average for nine months in the year—six grains per cubic foot in the winter time and just as variable as in the summer months, we have on very cold nights taken the moisture down to less than one-half a grain to the cubic foot. In day time as the temperature rises the moisture rises.

The first great benefit of the dry air, refrigerated air, is that there is no variation. We maintain that air uniformly at one and one-half grains

to the cubic foot. We do not pump the large amount of water into our furnace, and therefore we do not require so much coke. And if we do not have to put so much coke in we do not have to take care of the sulphur in that extra amount of coke. Further we do not have to put so much limestone in there to take care of that sulphur; so that we not only have the great advantage of uniformity from dry air but less trouble from sulphur. This is more important when you consider that all cokes that we have to use today are almost 33 per cent higher in sulphur than they were 10 years ago. You foundrymen know this just as well as the furnacemen, and you are up against it just the same because the coke you use is higher in sulphur; and the furnaceman must make his iron lower in sulphur before you can make good castings.

Can Reduce More Ore.

Also if we eliminate the moisture in the atmospheric air we can reduce 15 per cent more iron ore, many times 18 per cent; and if we have what we call a favorable mixture on, I have seen as high as 20 per cent. But 15 per cent can be guaranteed.

I have here a most interesting test, made during the month of August, between a furnace in Chicago and a furnace in Pittsburg. In the lining up of these two furnaces there was practically only one day difference. The one in Chicago in proportions as to size was 100 to the Pittsburg furnace 81; but the Pittsburg furnace proportion in producing pig iron per cubic foot of capacity was 88 per cent of the 100, or in other words it reduced 7 per cent more iron ore than the Chicago furnace for the cubic capacity. In the pig iron that was made in the Pittsburg furnace the sulphurs averaged 0.035 and the sulphurs in the Chicago furnace averaged 0.055. The Chicago furnace was on natural air and the Pittsburg furnace on dry air. There was also a difference of 350 pounds of coke to the ton of iron, showing for the Pittsburg furnace an increased output and a decreased amount of coke, to say nothing of the smaller amount of sulphur to contend with.

This Pittsburg furnace is today making as much foundry iron as it was making when running on basic. In other words, basic pig iron is all made below one per cent silicon and foundry iron from three-quarters to two and one-half per cent in silicon which requires more fuel. Yet this practically worn out furnace today, on dry air, is making good iron, uniform iron, and making it on a good deal less fuel, less coke than when making basic iron one per cent in silicon.

I do not know that I can say much more about the uniformity of dry air, but I can assure you, gentlemen, it is a great advantage when you consider the irregularity of fuel and the irregularity of iron, especially for the foundryman.

The address of Mr. Mason will be published in our next issue.

GENERAL COMPLAINT

That Business is Slow in New York Machinery Circles.

Office of THE IRON TRADE REVIEW,
Room 1005, No. 90 West St.,
New York, Oct. 8.

October in eastern machine tool trade is starting off as quietly as September, and there is general complaint on the part of dealers over the current state of business. There are no lists of consequence in circulation, either for immediate or early closing; even those western railway lines which had intimated they would be ready to purchase tools during September are still postponing the time for action. Conseqeuntly there is brisk competition for any business going. One enterprising concern in the local machinery district reports the past week as an unusually good one, but this was because it succeeded in landing more than its share of current orders and disposed of several large tools. As a rule, there is little business being booked and deliveries are constantly improving. Collections are being closely watched, but are not so bad as might be expected under the circumstances.

The Machinery Club, after a stretch of comparative inactivity during the vacation season, is preparing to inaugurate a vigorous campaign for members during the fall months. The steel frame work of the building which is to house the club is going up rapidly and has now reached the tenth story.

The Vandyck-Churchill Co. of New York, Philadelphia, Pittsburg, etc., has taken the exclusive Philadelphia agency for the Watson-Stillman Co. of New York. Its New Haven office has been removed to 808 First National Bank building, 42 Church street, New Haven. Announcement is also made by this company that it has concluded arrangements with the Cleveland Crane & Car Co. to act as the exclusive agent of the latter concern in the New York and Philadelphia territory. This new department of the Vandyck-Churchill Co. will be in charge of Louis H. Morgan, until recently manager of the Ridgway Machine Co. The Cleveland company manufactures a full line of electric and hand cranes of all descriptions. The sale of a 20-ton electric crane to the Astoria Light, Heat & Power Co. is reported.

George F. Schminke is manager of an office recently opened at 136 Liberty street, New York, by Roth Bros. & Co., Inc., whose works are at Chicago. Motors, dynamos and special electrical machinery are manufactured, the company being represented in the foundry trade by a strong line of blowers and grinding machines.

E. A. Johnson, of the Watson-Stillman Co., 26 Cortlandt street, New York, has left for an extensive business trip through the south and west.

The Grant Tool Works at Franklin, Pa., recently purchased by the Chicago Pneumatic Tool Co., has been placed in operation. The sales of this company show no signs of the much-discussed trade recession.

Batcheller, Clarke & Batcheller, 107 Liberty street, report the sale of a six-ton traveling crane, 28-foot span, to the McNeill Marble Co., Spartansburg, S. C.; also of a large jib crane for shipment to Texas.

NO CHANGE OF CONTROL

In Republic-Tennessee Interests—New Stock Subscriptions.

Current press reports to the effect that at the coming annual meeting of the Republic Iron & Steel Co., to be held in Jersey City Oct. 16, John A. Topping is to retire from the presidency are given official denial at the New York offices of that company. The report is declared to be without foundation and it is stated that Mr. Topping will continue in full control of the Republic-Tennessee interests.

As chairman of the Tennessee Coal, Iron & Railroad Co., Mr. Topping has sent out to stockholders notice that those of record Oct. 10 are given the privilege of subscribing for new stock equal at par to 12½ per cent of the par of stock held by them, respectively, at the price of $100 per share, payable in 20 per cent installments at the time of subscription, Dec. 16, 1907, Feb. 17, April 15 and June 15, 1908. This privilege expires Oct. 15; subscription certificates will be issued upon payment of the first installment, with partial payments bearing six per cent interest, and stock certificates will be issued upon the payment of the final installment in June. It is officially stated that this new issue of stock will finance the needs of the company for the coming fiscal year, covering payments for the extensive construction program now well under way in the Ensley district. A number of the leading stockholders, it is understood, will not only take up the maximum amount of stock allowed them in proportion to their holdings, but will also stand ready, to acquire any portion of the issue unsubscribed for by other stockholders. The amount of the new issue is $3,750,000.

STEEL-MAKING IRON OUTPUT REMAINS HEAVY

As was to be expected because of the shorter month and the number of furnaces inactive, either in part or through the whole of the month, the pig iron production of the United States in September, with a total of 2,166,548 tons, shows a loss of 77,017 tons over August, when the production reached 2,243,656 tons.

The September total output of 2,166,548 tons was divided into 680,050 tons made by merchant companies for general market sales, and 1,455,984 tons turned out by non-merchant companies for their own use.

One new addition to the blast furnace capacity of the country was made during September by the blowing in of the new furnace E of the National Tube Co., at Lorain, O.

SEPTEMBER FURNACE REPORT.

STATE	NO. OF STACKS SEPT.	NO. OF STACKS AUG.	NO. IN BLAST ON LAST DAY OF MONTH SEPT.	NO. IN BLAST ON LAST DAY OF MONTH AUG.	PERCENTAGE OF TOTAL POSSIBLE OUTPUT MADE	AV. DAILY CAPACITY IN BLAST LAST DAY OF MONTH	ACTUAL TONNAGE MAKE MERCHANT	ACTUAL TONNAGE MAKE NON-MERCHANT	TOTALS SEPTEMBER	TOTALS AUGUST
Pennsylvania	156	135	134	86.4	32,478	201,522	745,708	944,346	974,687	
Ohio	61	54	56	91.9	14,483	136,387	307,321	443,708	476,967	
Alabama	46	29	31	64.2	4,680	103,445	39,812	143,257	144,949	
Virginia	23	16	15	68.7	1,222	36,216	———	36,216	35,936	
New York	24	19	18	78.6	5,045	67,689	82,581	150,270	150,385	
New Jersey	11	8	8	72.7	1,095	32,133	———	32,133	34,361	
Illinois	24	23	23	95.8	6,792	23,263	173,863	197,126	211,394	
Tennessee	18	14	14							
West Virginia	4	4	4	73.8	2,385	41,448	28,190	69,638	69,945	
Kentucky	7	4	3							
Maryland	4	4	4							
Wisconsin	6	6	6	99.6	2,990	15,621	78,509	94,130	98,619	
Colorado	6	5	6							
Georgia	2	1	2							
Texas	3	2	1							
Minnesota	1	1	1	73.3	790	23,326	———	23,326	19,045	
Michigan	2	2	2							
Missouri	1	1	1							
Spiegel—All states								18,066	16,753	
Ferro—All states								12,448	10,615	
Totals	399	328	329	——	71,969	680,050	1,455,984	2,166,548	2,243,656	

The decline in output has been largely in the ranks of the merchant companies, the production of those furnaces operated for steel-making purposes remaining practically unchanged over the preceding month. When the fact of the one day shorter period of operation in September than in August, is taken into consideration, a gain is shown by the steel-making producers.

The number of furnaces in the country in blast Sept. 30 was 328 but one less than the number active Aug. 31. The active furnaces Sept. 30 had an average daily capacity of 71,969 tons, as compared with 71,687 tons Aug. 1. This capacity has started October upon its period of production under practically the same conditions that existed at the beginning of September. The average daily capacity throughout the month of September of the stacks in blast was 72,218 tons, a slightly less figure than during August, when the average was 72,376 tons.

BLAST FURNACE NOTES.

Clifton furnace No. 1 and Etowah furnace No. 2 of the Alabama Consolidated Coal & Iron Co., Birmingham, Ala., were out of blast during the entire month of September for relining.

The Imperial furnace of the Shelby Iron Co., Shelby, Ala., was out of blast during the entire month of September.

Rising Fawn furnace of the Southern Steel Co., Birmingham, Ala., went out for repairs Sept. 15.

No. 1 Wharton furnace of Joseph Wharton, Wharton, N. J. blew out Oct. 3.

No. 2 Hubbard furnace of Andrew & Hitchcock, Youngstown, O., which went out of blast for repairs Sept. 2, will be active again about Oct. 15.

The Bessie Ferro-Silicon Iron Co., Columbus, O., attained a record run during the six months from March 15 to Sept. 15, not having an off-cast during that time at its Bessie furnace. The furnace was shut down Sept. 16 for two days for minor repairs that were absolutely necessary. Superintendent Joseph Blankenship had charge of the furnace during its record production.

Furnace D of the Bethlehem Steel Co., South Bethlehem, Pa., which has been out for relining, again became active Sept. 12.

Three furnaces of the Carnegie Steel Co. were on the inactive list Oct. 3. Furnace F of the Edgar Thomson group was out three days, No. 1 Duquesne was out the entire month and No. 3 Carrie was idle 19 days during the month.

One furnace of the Eliza group of the Jones & Laughlin Steel Co. Pittsburg, was inactive nine days during September.

The Juniata Furnace & Foundry Co., Newport, Pa., is erecting two new hot ovens at its Marshall furnace.

The new furnace E of the National Tube Co., at Lorain, O., was blown in Sept. 26. Furnace B, Lorain, was blown out Sept. 21 for relining.

No. 1 furnace of the Pennsylvania Steel Co., Steelton, Pa., which has been blown out of blast for repairs, blew in Sept. 25.

Rockdale furnace of the Rockdale Iron Co., Rockdale, Tenn., made a record run of 62 tons for one day during the month.

The West End furnace of the West End Furnace Co., Roanoke, Va., is out of blast for relining and general repairs. The company is installing a new Baker top and is changing its stoves. New Cochrane heaters and condensers will be installed. The furnace is expected to be one of the best equipped in Virginia when it again becomes active about Jan. 1.

ORE SHIPMENTS INCREASE.

Duluth, Minn., Oct. 8.—Ore shipments for the week ending Oct. 7, 1906, from the head of the lakes were as follows: Great Northern Railway Co., 179,644; Duluth, Missabe & Northern Railway Co., 353,952; Duluth & Iron Range Railway Co., 269,186; total, 802,782 tons.

Shipments for the week ending Oct. 7, 1907, were as follows: Great Northern Railway Co., 266,572; Duluth, Missabe & Northern Railway Co., 508,119; Duluth & Iron Range Railway Co., 261,787; total, 1,036,478 tons.

AN INDUSTRIAL RAILWAY AND CAR SHOP

The Works of the Arthur Koppel Co. at Koppel, Pa. for the Manufacture of Portable Railways and Industrial Cars

A plant modern in every respect and designed especially for the manufacture of industrial railways, complete with all equipment, including cars, track sections, turntables, etc., has recently been built and placed in operation by the Arthur Koppel Co., at Koppel, Pa. The Arthur Koppel Co. is a German organization, with plants in every country in Europe, and offices in the principal cities of the world. The present plant is the first it has built in this country. The main office in America is in Pittsburg. In connection with the plant, the company is building a town, having purchased between 600 and 700 acres of high, flat ground some miles north of Beaver, Pa. It is the intention of the company to exploit the property by means of an auxiliary company known as the Koppel Land Co. and to induce other industrial concerns to locate there.

The town will have splendid railroad facilities, the Pittsburg & Ashtabula division of the Pennsylvania system being on one side of the town site and the main line of the Pittsburg and Lake Erie railroad on the other side. The Beaver connecting railroad has been built by the Arthur Koppel Co., running through the center of the town connecting with both the Pennsylvania and the P. & L. E. roads. Spur tracks are to be run

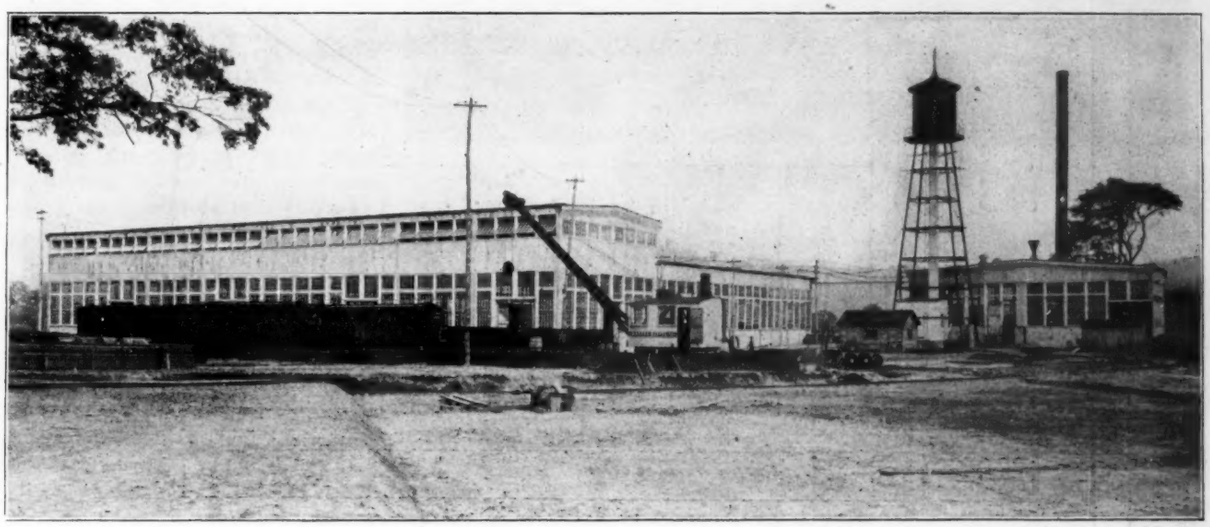


FIG. 1.—PLANT OF ARTHUR KOPPEL CO., FROM OFFICE; ERECTING SHOP IN FOREGROUND.

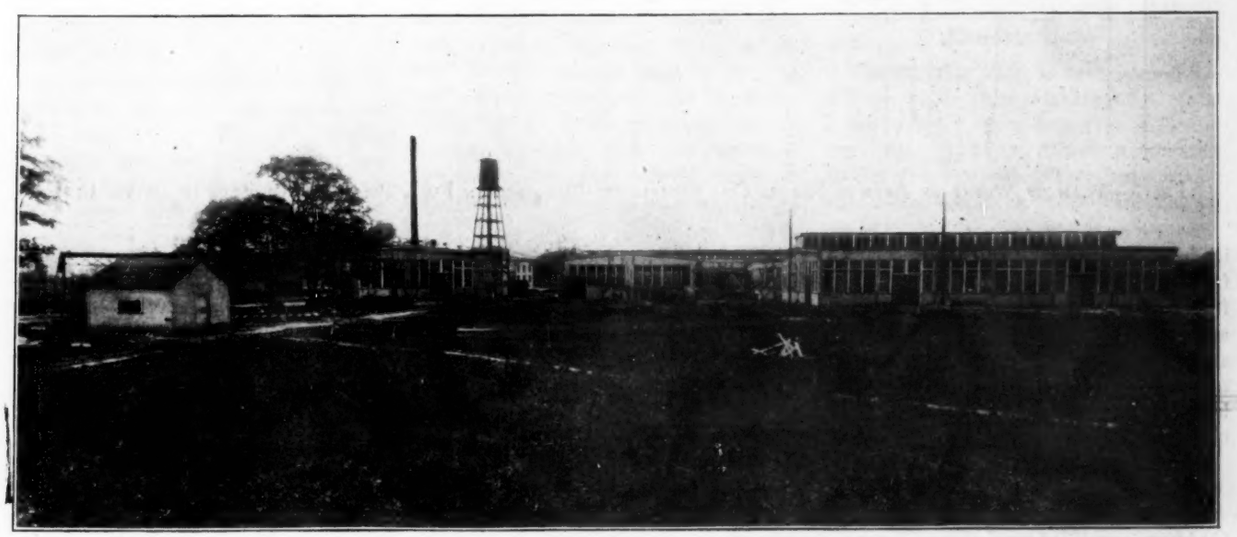


FIG. 2.—PLANT OF ARTHUR KOPPEL CO., FROM REAR; SMITH SHOP IN FOREGROUND.

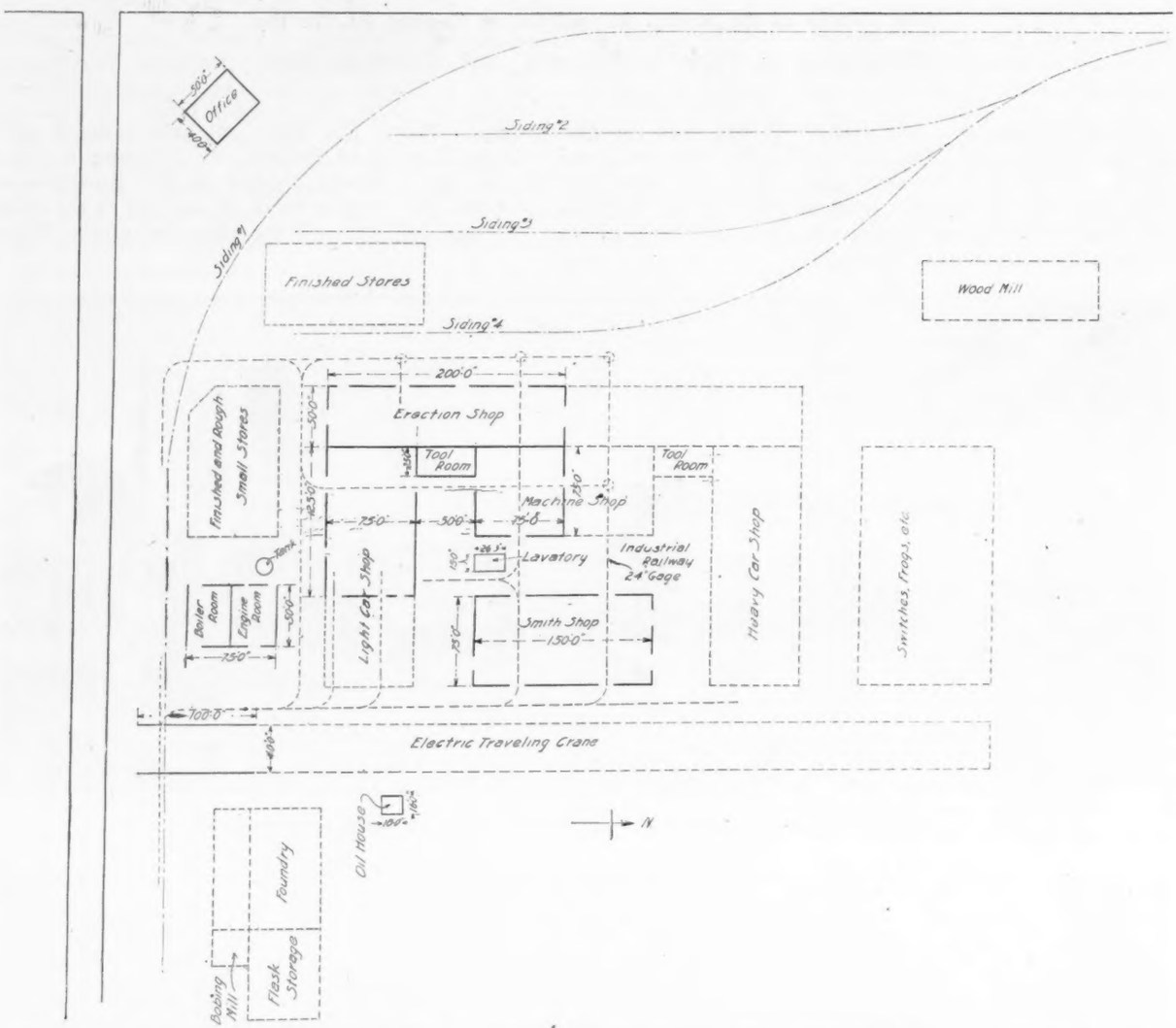


FIG. 3.—PLAN OF WORKS OF ARTHUR KOPPEL CO.; COMPLETED BUILDINGS IN FULL, PROPOSED BUILDINGS IN DOTTED LINES.

in from this connecting road to any factories which may be built in the future. The streets are laid out and are sewered and graded. In the spring they are to be paved with brick. A hotel is to be built and homes for the workmen are being put up.

General Arrangement.

The plant of the Arthur Koppel Co. has been designed with a view to further extensions which will about quadruple its present capacity. The sections erected at present comprise a power house, a light car shop, a machine shop, smithshop and erecting shop. These buildings are all of steel framework with a concrete curtain wall extending about 6 feet from the ground. Above this level the walls of the building are entirely of glass, affording excellent light on the interior. The roofs are flat with the exception of the smithshop, which has a monitor roof.

The general arrangement of the buildings is shown in the ground plan, Fig. 3, which indicates in full lines the buildings already constructed and in dotted lines the extensions as planned. Although the plant has been in operation but six months, the necessity for the extension is already felt, and it is probable that in the near future, the erecting shop will be extended further to the north, in accordance with the plans already developed.

The arrangement of buildings is such that the raw material passes from the store yard into the various shops, either the smith shop, plate shop and machine shop and moves through them in a constantly forward direction, the various parts from the different shops finally converging at the erecting shop. Such parts as can be conveniently assembled during their progress through the shops are put together before they reach the erecting floor, thus saving both time and labor in the handling of a multiplicity of small pieces. The shops have been planned so that a piece in any shop never has to go backwards for an operation. All operations of similar character are completed at one time, as punching, drilling, shearing, etc., and the pieces then pass to the next machine. If it is necessary that, say, a drilling operation be performed on a piece after it has passed the first drill press, this work is done on a machine installed further along in the shop, so that there is no interference

with the progress of the work through the building.

Light Car Shop.

The light car shop, the interior of which is shown in the illustration, Fig. 4, was also designed with the same idea in mind. The lighter pieces pass along one side of the building, while the heavier ones, such as plates, heavy angles, etc., are worked on the opposite side. The equipment of this shop is complete and was selected with a view to rapid and economical production of work. A 2-ton Niles crane spans one bay of the shop for handling the heavier pieces, while a number of jib cranes are installed in the opposite bay for serving the various punches and other tools. The equipment for working heavy plates comprises a Lennox rotary splitting shear, a set of bending rolls and a set of straightening rolls built by the Cleveland Punch & Shear Works, Cleveland, a Williams & White multiple punch and a No. 3 Hilles & Jones plate flanging clamp. In addition to these machines, there is a 10-foot post radial drill installed against one wall of the building and used for countersinking plates. This is a particularly handy machine for this purpose, as the plates can be placed in a pile under it, all the holes in the top plate countersunk, the plate lifted off and the next lower one operated on immediately. When occasion demands, this machine is also used for drilling.

The equipment in the other bay of the light car shop for handling lighter work comprises a No. 19 Higley cold metal saw, two 20-inch Williams & White single punches, two 28-inch drill presses and one 26-inch drill press, an emery grinder and a rotary riveting hammer. All machines in this shop are motor-driven, this fact being conducive of the orderly progress of the work, inasmuch as the machines can be placed where most convenient, irrespective of the position of any other machine and without relation to any line shafting,

It is in this shop that the plates for the car bodies are sheared to shape, punched and bent, the angles bent, sheared, punched and drilled and the small pieces manufactured. As has been mentioned before, any assembling that can conveniently be done is performed here during the progress of the work through the shop. This shop opens directly on to the erecting shop, as does the machine shop, which is parallel to it and at the opposite side of a court yard formed by the

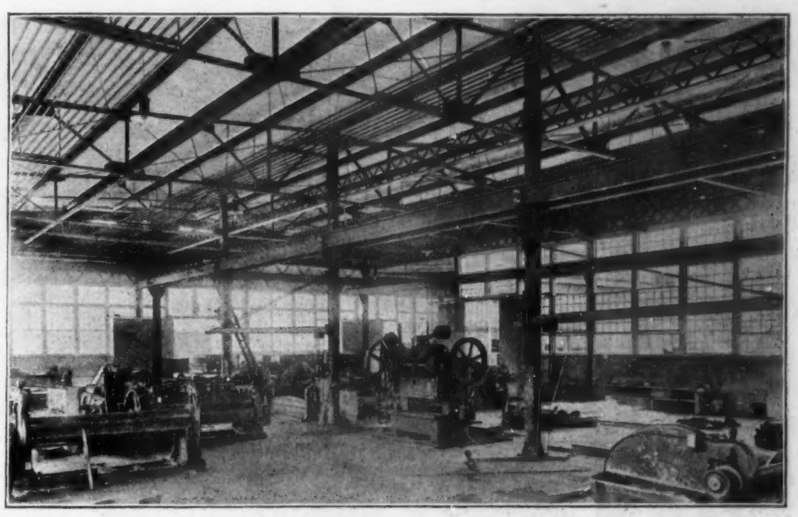


FIG. 4—INTERIOR OF LIGHT CAR SHOP.

erecting, car, machine and blacksmith shops.

The raw material for the machine shop is brought in either directly from the yards or from the smith shop, depending upon whether any forging is necessary. The amount of machine work required on cars is relatively small and yet the equipment is unusually complete, comprising, as it does, four engine lathes, a double head axle lathe, two turret lathes, a 30-inch Warner & Swasey vertical boring mill and a 36-inch Baker car wheel borer, two 2-spindle, Henry & Wright sensitive drills, a 4-foot Bickford radial drill, a 16-inch American shaper, a 28-inch Hoeffer upright drill, a No. 15 Lea simplex cold saw and a 40-ton wheel press. These machines are all installed wherever they will be most convenient for the orderly progress of the work through the shop and without relation to any straight lines or angles.

Axles are turned in a double head Bridgeford axle lathe, while the wheels are bored out for the axles in the boring mill and the car wheel boring machine. The 40-ton wheel press serves to force them on their axles, this machine being the last one installed between the machine shop and erecting shop. Wheels, axles, journal boxes and other small parts are finished here and meet the car bodies, underframes, etc., on the floor of the erecting shop.

Erecting Shop.

The erecting shop is commanded by a 5-ton Niles electric crane of 47 feet 2 inches span. It contains no machinery other than an Albree pneumatic riveter and two size 1 Tate-Jones portable rivet furnaces. All riveting is

FIG. 5.—INTERIOR OF SMITH SHOP.

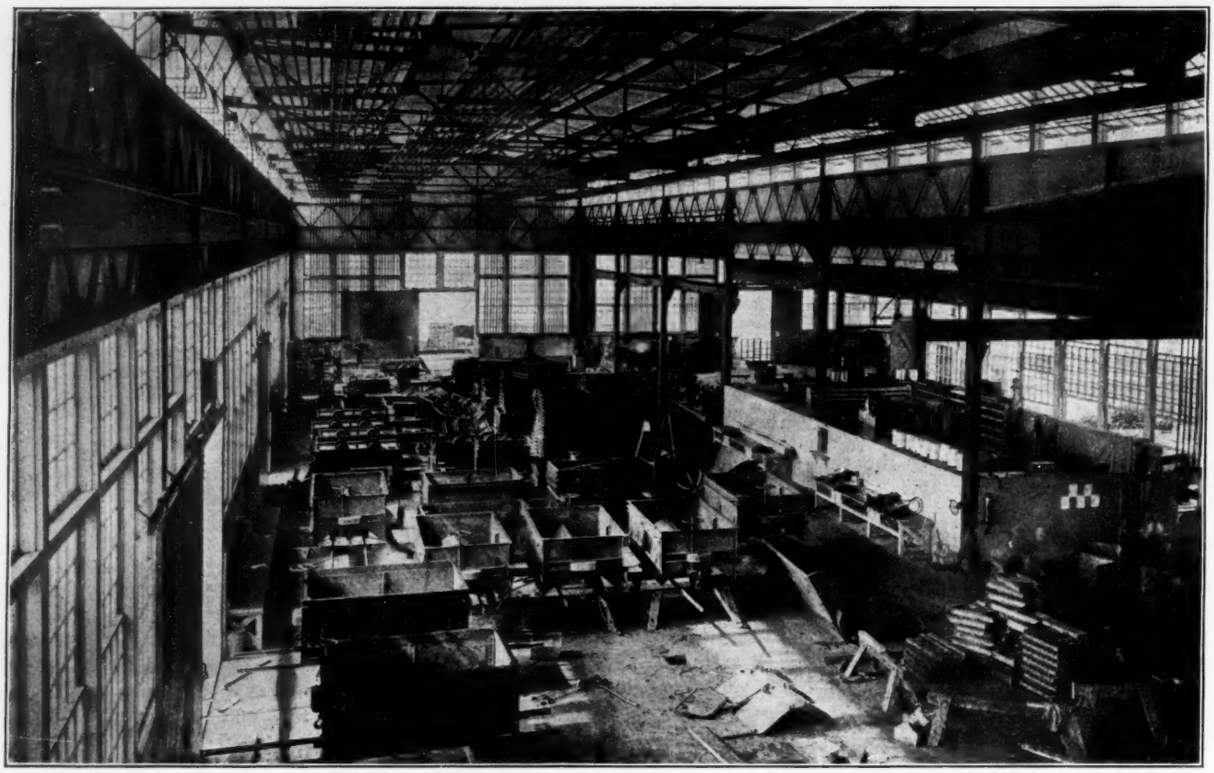


FIG. 6.—INTERIOR OF ERECTING SHOP.

done by means of pneumatic tools, connections for which are liberally supplied, these being placed in wells in the floor, all pipes being underground.

A feature to which the superintendent of the plant, H. A. Ellis, points with considerable pride is the floor. This consists of five inches of tar concrete, to which are spiked 4-inch hemlock planks, these latter being overlaid with 1-inch maple boards. The floor was built perfectly level and is maintained so. All horses used for erecting purposes have been made of uniform height and level, so that when an underframe for a car is placed on a pair of horses the workman knows without any further trouble that it is level and that he can commence immediately to assemble the car. This is a small thing, but the amount of time saved over the old method of leveling by means of liners and shims is, in the aggregate, considerable. The completed cars pass out through the front of the erecting shop to the finished stores yards, where they are either shipped or placed in stock.

Smith Shop.

The smith shop contains, in addition to the blacksmith machinery, machines for the manufacture of switches. These are installed in the opposite end of the shop from that shown in the illustration, Fig. 5. The idea of this is that comparatively little machining is to be done on switches after forging. With the machinery installed close to the forges, the switches can be finished and placed in storage with a minimum of handling and with great economy of labor.

The equipment of the smith shop comprises six type J-2 Sturtevant down draft forges, two coke heating furnaces, an 18-inch No. 6 Ajax bulldozer, a No. 5 Sturtevant flanging forge and a 600-pound Bement-Niles single frame steam hammer. These are all installed at one end of the smith shop, as shown in the illustration. In addition to the above machinery, there is a 6-foot grindstone and frame direct connected to a 14-horsepower Westinghouse motor, a 47-inch plate flange and a 90-inch Sturtevant steel plate exhauster driven by a 15-horsepower Westinghouse motor. This exhauster draws the smoke and waste gases from the forges and discharges them into a common stack.

A somewhat unusual arrangement has been adopted for the placing of the forges, this being on the four sides of a square instead of in rows, as is often found. By means of this arrangement, the economy of space is high, and each blacksmith and his helper are entirely free from interference by the other men working near them. The smith shop is commanded by a 2-ton Niles electric crane, 35 feet 4 inches span, which is operated from the floor by means of pull switches, the handles of which can be seen at the extreme left of the illustration, Fig. 5.

The equipment installed in the switch department comprises two 30-inch by 10-foot planers, a 16-inch American shaper, a No. 2 Henry & Wright 2-spindle sensitive drill and an 8-inch No. 5 Cincinnati punch. All these machines are driven by individual electric motors.

Transportation Facilities.

Not the least important feature of the plant, and one which conduces highly to economy and rapidity of production is the extremely complete means provided for transportation. A spur from the Beaver connecting railroad branches as is shown in the ground plan, Fig 3. Two of the main sidings shown there have been constructed complete. The others are to be put in in the near future. A 100-ton track scale is situated on the spur immediately after it leaves the connecting railroad. A narrow gage industrial system is laid through the yards and into all the buildings, as shown on the ground plan. All shops

are commanded by cranes, either of the jib or traveling types, as may be most convenient for the work carried on in that particular building. There is no portion of the plant from or to which material cannot be transported quickly and conveniently.

Raw material is brought into the plant on siding No. 1 and is unloaded from cars by the electric traveling crane in the yard. This crane has a runway at present 100 feet long, but will ultimately be extended the entire length of the plant. The crane can deliver either to the raw material store yards, or to cars on the industrial railway system, which extends underneath the crane runway. In the yard at the end of the light car shop is installed a double angle shear and a guillotine bar shear for cutting these materials to proper lengths before entering the shops. These are accessible to the industrial railway system, which, not only delivers material to them from the raw material stores or cars, but also conveys material from them to the various shops. A 5-ton Dodge Coal Storage Co.'s locomotive crane with a 35-foot boom is utilized for yard service.

Power Plant.

The power plant, situated at one side of the light car shop, is divided into two rooms, the engine room and the boiler room. The boiler room is depressed about six feet below the ground level, enabling coal to be delivered directly from cars on siding No. 1 to the floor of the boiler room. The boiler equipment consists of two 200-horsepower Erie City water tube boilers of the Heine type.

The engine room equipment comprises a 14½ x 16-inch Buckeye engine, direct connected to a 125-kilowatt Northern generator, which furnishes current at 250 volts. This is distributed from a 4-panel Northern switchboard. The engine room also contains an Ingersoll-Rand, two-stage compressor furnishing power for the pneumatic tools used in the shop. A 15,000-gallon water tank and tower adjoin the power house, the tank being elevated to an altitude of 85 feet. Water is drawn from a 200-foot well by an American deep-well pump and delivered to this tank, whence it is distributed to all parts of the plant. The floor of the engine room is elevated above the ground level, enabling a basement to be provided in which is installed all the auxiliary machinery, including the boiler feed pump, a Webster feed-water heater and a Marsh vacuum pump in connection with the heating system for which exhaust steam is used.

Building Construction.

A feature of the building construction, which has an important bearing on the arrangement of the plant, is the use of the concrete curtain wall for a height of six feet above the ground level. This is used as the back of storage bins which are built on the outside of most of the buildings. A greater height than six feet would have cut off the light largely from the interiors of the shops, while a height of less than six feet would have made the arrangement of bins inconvenient. These bins comprise two shelves projecting from the buildings with suitable partitions and covered by a roof projecting about three feet from the wall. All stock material of small size, such as pins, light castings, chain links, etc., are kept in these bins, being always accessible and yet not making disfiguring heaps through the yard. The heavier material, comprising angles, channels, die sections, rails, etc., is piled in the raw material stores yard.

Cost Keeping.

A feature worthy of mention is the cost keeping system developed in connection with the manufacture of the industrial railways. In a plant of this character, it is not necessary, or even desirable, that the detailed cost of each piece be obtained. What is desired, however, is the cost of each operation on a given order. The system is so devised that the total cost of an order up to quitting time of the night before can be obtained by 3 o'clock on any day.

The cost sheet contains a list of all the operations performed in the manufacture of a car, as cutting, punching, drilling, riveting, fitting, etc., and is divided into vertical columns representing days. A separate cost sheet is given to each order, the particulars of which are duly entered at the top of the sheet. As the time checks are turned in from the men, the cost of each operation performed by each man during the day is computed and the total cost of all similar operations performed by all the men working on a given order is obtained and entered opposite that operation on the cost sheet. The cost of each operation is every day added to the total cost of the same operation on all the days up

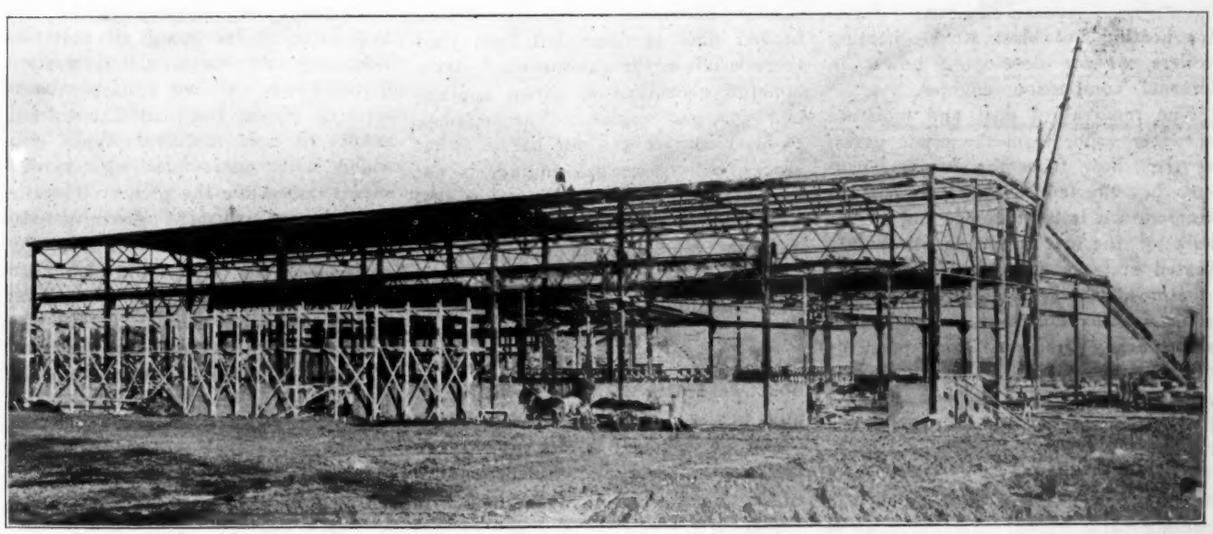


FIG. 7.—ERECTING SHOP PARTIALLY COMPLETED, SHOWING TYPE OF BUILDING CONSTRUCTION.

to that time, and this total entered in another column. These totals are then added and entered in a space at the bottom of the total cost column for the day. This method gives at a glance the total cost of an order to date, the total cost of any particular operation to date, or the amount expended on a given date on the order, or the cost of a certain operation on a certain day, which is about all the information necessary in work of this character. As the cost of production of industrial cars of a given type is very nearly in proportion to the weight of the cars, it is easy to estimate the cost of a given order, provided a somewhat similar order has been put through the shop at some earlier date.

The system used in building a large order causes the first car of that order to be built to individual measurements every piece being laid out with a rule and square. After this car has been built, its various pieces are used for the laying out of templates and jigs, which are used in the manufacture of all other cars of that order. This method insures that every part of every car will be interchangeable and that all cars will be exactly like the first one built.

The plant was designed and constructed by Dodge & Day, engineers, Philadelphia, ground being broken for it in June, 1906, and work commenced in the new plant about six months ago. The total number of men employed at present is about 200.

THE BLAST FURNACE--VIII [1]

Utilization of Waste Gases

BY HORACE ALLEN

The maximum thermal efficiency of the waste gases from the blast furnace can only be secured by their preliminary purification from any matter which may deposit or condense, whether the gas is to be employed for heating hot blast stoves, heating boilers, or for developing power in internal combustion engines.

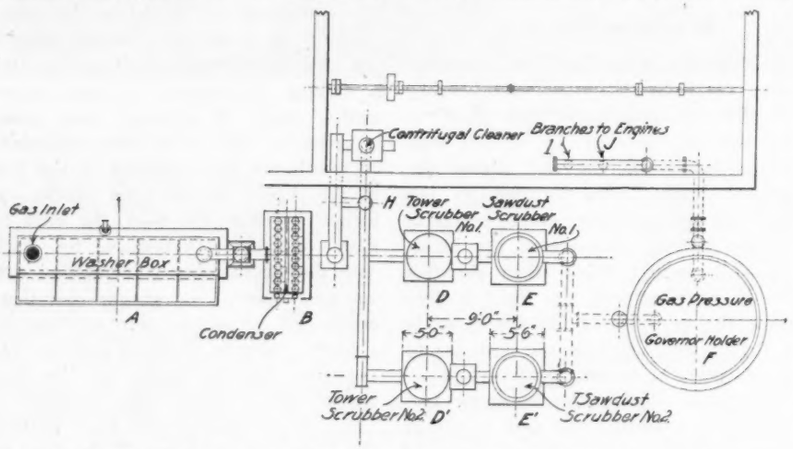


FIG. 1.—GENERAL PLAN OF THE THWAITE-GARDNER BLAST FURNACE GAS CLEANING PLANT.

The removal of dust and moisture or water vapor from the crude gases, as they flow from the furnace, cannot be effected while the sensible temperature is maintained, and as the bulk of the gas while in its highly heated state is double or treble that at atmospheric temperature, treatment while in this condition would necessitate heavy first cost for apparatus of sufficient capacity to so reduce the velocity in the tubes, etc., to allow of the settlement of the dust gravimetrically.

Even though the sensible heat amounts to about nine per cent of the heating value of the fuel burnt, it is found in practice that if cleaning is to be attempted cooling must form the first step in the operation.

Any system of cooling to atmospheric temperature is accompanied by the removal of the water vapor and a very considerable proportion of the heavier dust particles, but even then there is left in the gas too much dusty fume to permit of its direct application to gas engines. The cleaning of blast furnace gas, for use in either stoves, boilers, or gas engines is not so much a matter of engineering skill as a question of capital outlay, otherwise no modern iron making plant would be installed without an effective cooling and purifying plant to deal with the whole of the gas issuing from the furnace. There is little doubt that with a suitable demand for any power that the excess of gas would be capable of developing, the increase in stove and boiler (if such was retained) efficiency, combined with the profit to be obtained from the sale of gas power would form a considerable source of profit.

A review of the gas treatment plants already installed, will show that cooling by radiation from large diameter tubes by exposure to the atmosphere is very expensive, and even then the extent of purification is not sufficient to allow of the gas being used in gas engines.

This being so, the application of water is generally resorted to, and additional apparatus, usually consisting of a centrifugal fan is applied to assist in the cleaning and to propel the gas through the plant.

When the centrifugal fan was first applied for this purpose, it was found that the gas must be cooled previous to its entry to the fan and that the centrifugal action on the particles of dust rapidly obstructed the passages, so that water jets had to be applied to flush out the blades and casing.

The fan was therefore found to be an important factor as a cleaning machine and many types were devised and exploited as being all that was necessary for practical purification. Thwaite was the first to apply water washing to the fan, and Theisen and others devised different types provided with water washing arrangements, but while the pioneer Thwaite-Gardner gas treatment system included a washer, cooler, fan, and fine physical filters the other types claimed to dispense with the other apparatus, other than the centrifugal machine, provided that the gas was delivered to it in a cooled and water-saturated condition.

The admission of water to the interior of a fan very materially increases the power required to drive it; a single fan purifier capable of dealing with the gas required by a 600-horsepower gas engine requires about 16 horsepower, while two fans, though

[1] Final article.

giving a reduction in the dust, require about 26 horsepower.

In comparing the efficiency of blast furnace gas cleaning systems, some engineers have taken as a basis the ratio between the weight of dust in the gas before entering the apparatus and after leaving it. This is of little value, but the true test is the proportion of dust remaining compared with the total cost of purification for the removal of the last p tions of the fine fume and condensib. ydrocarbons is the most difficult and costly.

In one case a fan requiring sixteen horsepower to reduce the dust to 0.0032 pounds per 1,000 cubic feet the further reduction to 0.002 pounds by the application of a second fan required the additional expenditure of 10 horsepower.

The cost of a complete gas cleaning plant is governed not only by local considerations but also by the degree of purity, or freedom from dust and moisture which is to be reached. While in one instance a gas plant, to deal with 1,000,000 cubic feet of gas per hour, was estimated to cost $33,500, another system was computed at $100,000.

A general plan of a pioneer gas treatment plan, on the Thwaite-Gardner patented system, is illustrated in Fig. 1, and is a type of plant to clean only the gas to be used for driving gas engines, being made up of items not larger than can be conveyed over the railways, and delivered to the site in a complete state ready for erection upon slight foundations. For treating the whole of the gases issuing from one or more furnaces, the various functions are arranged to be performed in cylindrical casings similar to hot blast stoves. A pipe connects the furnace gas flue to the gas inlet of the washer box A, where the hot gas is made to pass under a series of diaphragms the lower edges of which dip slightly below water. To prevent the gas from passing in voluminous streams through the water, the lower edge of each diaphragm terminates in a frame of wire netting which splits up the streams of gas and brings them more intimately into contact with the water. This washing apparatus cools the gas considerably and arrests the coarser particles of dust; means are provided for cleaning the grids by moving them about in the water while the arrested dust falls to the tbotom and is removed by scrapers, at suitable intervals by way of the open side trough. From the washer A the gas passes through a seal protected pipe to the condenser B, consisting of two

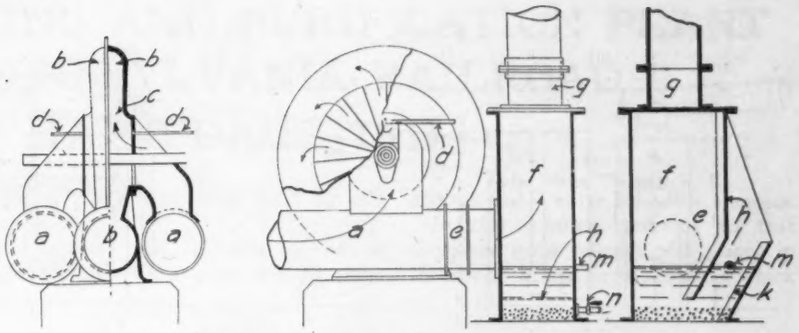


FIG. 2—TYPE OF GAS CLEANING PLANT AT DIFFERDINGE.

A—INLET PIPES ON BOTH SIDES LEADING TO AXIS OF FAN. B—FAN. C—VANES ON FAN. D—WATER PIPES ON EITHER SIDE OF FAN NEAR AXIS. E—EXIT PIPES FOR CLEANED GAS AND DUST LADEN WATER. F—GAS BOX WITH WATER-SEAL AT BOTTOM. G—GAS PIPE LEADING TO THE ENGINES. H—SCREEN WALL OF GAS BOX. I—PASSAGE UNDER SCREEN WALL TO CHAMBER L. K—LOW OUTER WALL ON CHAMBER L. L—OUTER CHAMBER. M—OVERFLOW PIPE LEADING TO SETTLING POND. N—CLEANING VALVE.

long boxes connected together by a series of vertical ∩ pipes.

At this stage the temperature of the gas is reduced to nearly that of the atmosphere and in a fit state to enter the centrifugal suction and blower fan which is actuated by a belt from a countershaft driven by the main engine. Though the gas is cool, it is far from being clean enough for use in gas engine cylinders, but the action of the fan and the water jets applied, causes a further saturation and purification and the pressure set up forces the gas through the coke scrubber D and sawdust scrubber E and thence to the pressure governor holder.

The scrubbers being provided in duplicate (a range of more units would only require one additional set of scrubbers) the purifying materials can be changed without interrupting the running of the gas engines, and the installation can be run continuously for considerable periods. The numerous water seals provided render any accidental explosion, through air getting in, quite free from dangerous results.

At Differdinge and Dudelinge works in the Grand Duchy of Luxenbourg, gas cleaning fans designed by M. Lencauchez, of Paris, shown in three views in Fig. 2, have been applied with good results. At the former works, two fans, in series were employed, and to provide for a station aggregating 5,000 horsepower it was expected that the power required by the fans would be about 100 horsepower. Though the writer cannot confirm this figure, it was stated that

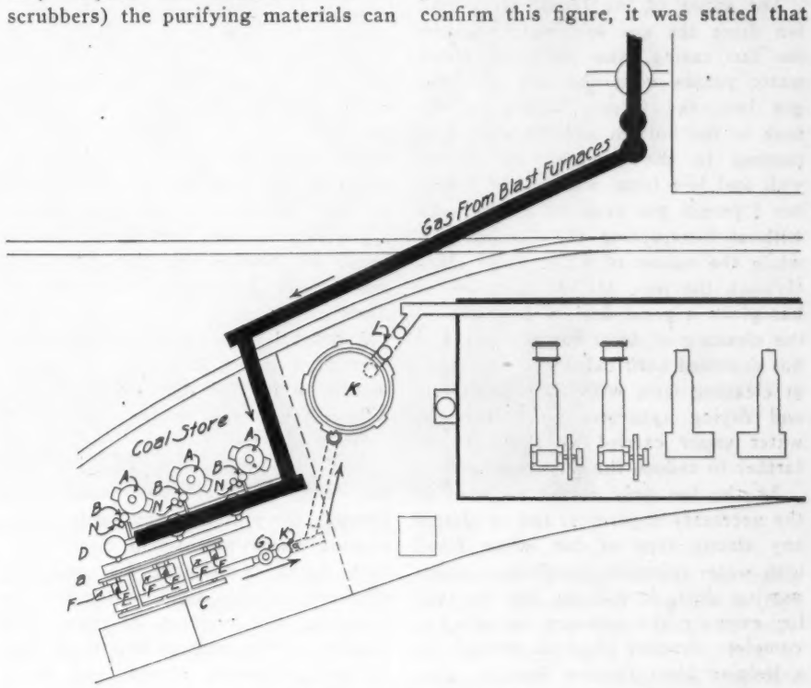


FIG. 3—GENERAL PLAN OF 4,600-HORSEPOWER BLAST FURNACE GAS CLEANING PLANT.

A—GAS PRODUCERS. B—AIR HEATERS. D—SCRUBBERS. E—FAN. F—DYNAMOS. G—MECHANICAL DRYER. H—CONTROLLERS AND REGULATING VALVES. J—CONTROLLERS AND REGULATING VALVES. L—CONTROLLERS AND REGULATING VALVES. O—KORTING BLOWER.

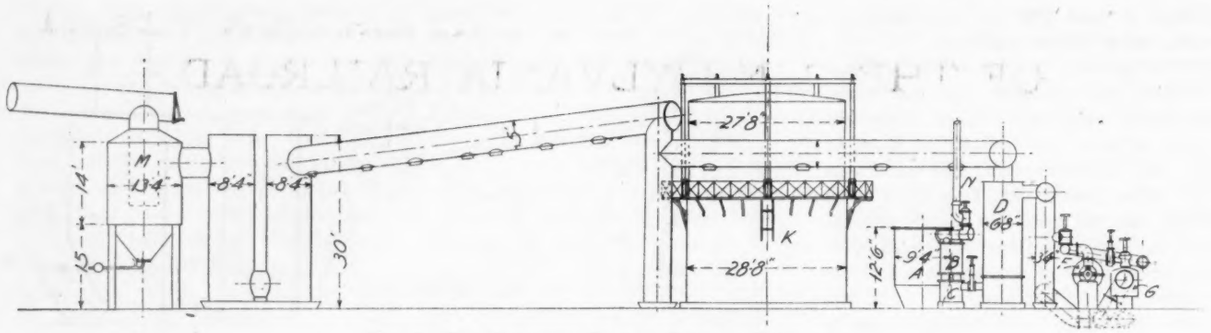


FIG. 4—GAS CLEANING PLANT, GENERAL ELEVATION.

the results were such that it was decided to purify the whole of the gas given off from the furnaces. However, it must be clearly understood that the fans did not constitute the whole of the purifying plant for while near the furnaces the content of dust amounted to 0.625 pounds per 1,000 cubic feet, it was only about 0.25 pounds at the entry to the fans; tests made on the gas, with the two fans, showed before the fans 0.141 pounds of dust, and after the fans 0.022 pounds per 1,000 cubic feet. At the Dudelinge works, more perfect cleansing apparatus was applied, for the gas is made to pass through scrubbers packed with wood fibre which reduce the mechanically carried dust to 0.022 pounds per 1,000 cubic feet previous to its entry to the fan, and the purified gas carries only 0.00625 pounds of mineral dust per 1,000 cubic feet.

The vanes of the rapidly revolving fan drive the gas and water against the fan casing, and the dust laden water passes with the gas into the gas box, the former falling to the tank at the bottom and the clean gas passing to the engines; the screen wall and low front wall of the chamber I permit the removal of sediment without interrupting the flow of gas, while the excess of water flows away through the pipe M. M. Lencauchez has given a great deal of attention to the cleaning of blast furnace gas and has designed both exhauster and blower cleaning fans, with water injection, and drying apparatus to reduce the water vapor carried by the gas and further to reduce the dust content.

As the fan only forms an item in the necessary apparatus, and as almost any strong type of fan, when fitted with water injection is effective in removing dust, it will be best to take for example the instance including a complete cleaning plant as erected for a Belgian blast furnace firm, to handle gas equivalent to the requirements of gas engines of 4,600 horsepower as illustrated in Fig. 3.

It will be observed that between the blast furnaces and the fans the gas passes through the usual dust catchers, and also a considerable length of large diameter tubing, before it arrives at the purification apparatus proper. As is usually the case, the coarse particles of dust are arrested, and the temperature considerably reduced. Auxiliary producers are provided to take care of the gas engines during any temporary stoppage of any blast furnace. Three fans are driven by electric motors and the gas from the blast furnaces is drawn through the scrubbers provided both for this purpose and for cleaning the producer gas. The capacity of the three producers is 1,200 to 1,800 horsepower. A gas drying apparatus is also provided, and a small gas holder regulates the pressure of the gas delivered to the engines.

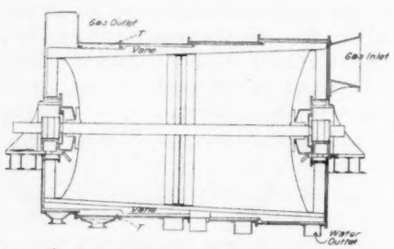


FIG. 5—LONGITUDINAL SECTION OF THEISEN GAS PURIFIER

A general elevation of the whole gas cleaning plant is shown in Fig. 4, and it will be noticed that the fan forms only a small item in the total initial cost.

The suction and propulsion of the gas from the furnace mains and through the purifying apparatus necessitating some mechanical contrivance such as a centrifugal fan and the efficiency of this type of machine in reducing the content of dust, has caused it to become an important item in gas treatment plants, and while local conditions and the ironmasters' experience enter largely into the design of the dry purifiers, washers, scrubbers, etc., the fan itself has been made a special feature and a number of modifications have been exploited.

It would appear that the centrifugal gas cleaner designed by W. Edouard Theisen has reached a stage of popularity as its manufacture has been undertaken by a number of firms.

A longitudinal view of this apparatus is given in Fig. 5. It consists of a casing enclosing a drum which is made to rotate with a tip speed of the longitudinal vanes, of about 130 feet per second. The action of the vanes draws the gas in at the gas inlet chamber and causes it to traverse the space between the drum and the casing on its way to the gas outlet. Water jets are applied and the centrifugal action throws the gas and water, intimately mixed against an interior casing of wire gauze through which the dust laden water passes away to the water outlet, and thence through a seal pipe to waste, or to settling ponds, while the cleaned gas leaves the purifier at a pressure of about six inches of water.

One of these machines, 9 feet diameter by 11 feet long, running at 300 revolutions per minute presents a contact washing surface of 200,000 square feet per minute to the gas, and it is claimed that the dust has been reduced to as low as 0.000625 pounds per 1,000 cubic feet, while in one case where two fans were employed to clean 210,000 cubic feet of gas per hour the gas still carried 0.0125 pounds per 1,000 cubic feet of gas treated, and the power required was 110 horsepower; to clean this volume of gas by a Theisen washer would only require 40 horsepower. To reduce the dust to an average of 0.0031 pounds per 1,000 cubic feet per hour is said to require 0.12 horsepower for the volume stated.

The name of the Angola (Ind.) Furnace Co., has been changed to the Decatur Furnace Co., because of the removal of the plant to the latter city.

WATER SOFTENING AND PURIFICATION PLANT OF THE PENNSYLVANIA RAILROAD AT HARTSDALE, IND.

The importance of purification and softening water for various industrial purposes is becoming more generally realized every day. Previous to 1900 there were practically but one or two manufacturers of apparatus of this character in the country. At the present time there are probably a dozen well-recognized concerns. The first plant erected for commercial purposes in this country was about 1895 and during the three or four years following all the plants were built by one concern.

Engineers and chemists looked on the matter with a good deal of skepticism in spite of the fact that such plants had been in operation in European countries for ten or twelve years previously, and were well established as a successful operating device, in fact, were acknowledged in European countries as the only recognized practical method of purifying a hard and unsuitable water for boiler purposes.

In this country, previous to that time, the main reliance was placed in so-called boiler compounds, which were more or less efficient, according to their composition and the waters with which they were used. In addition to compounds, there were, of course, various mechanical devices called boiler purifiers, such as skimmers, circulating devices and various patented devices, the internal arrange-

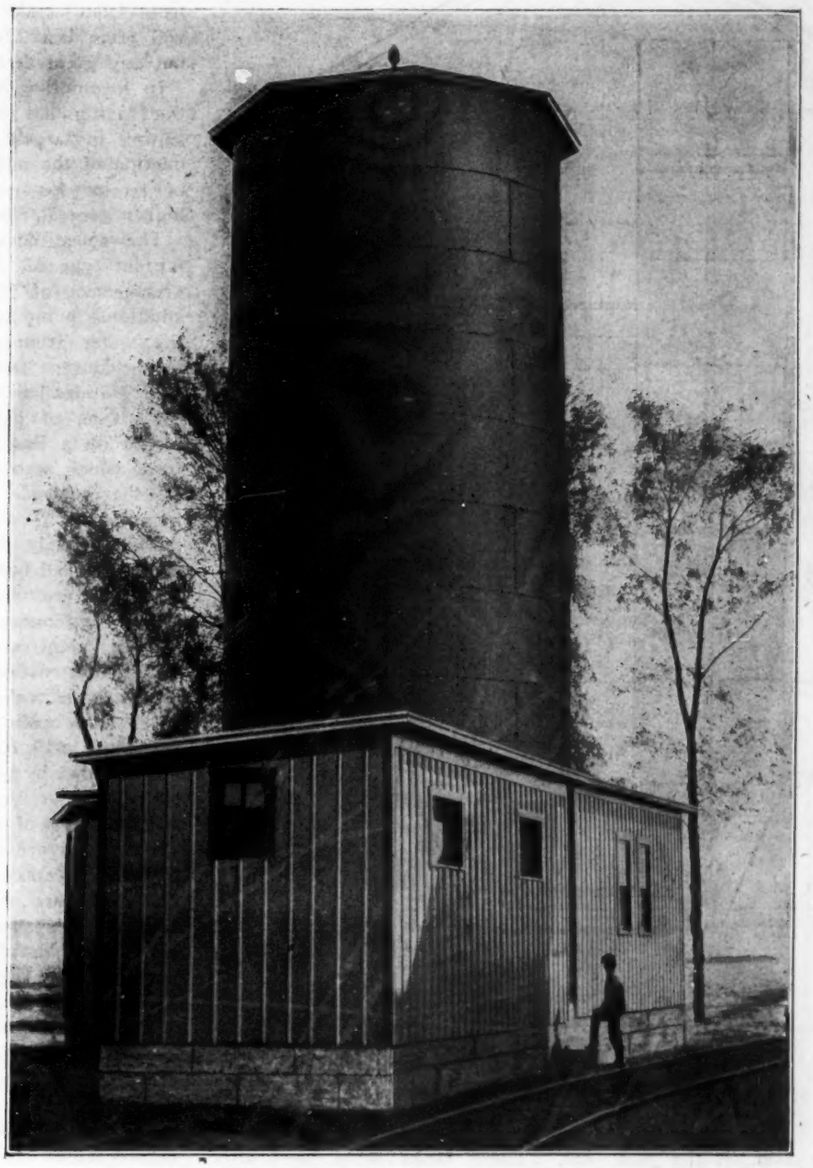


FIG. 1.—HARTSDALE FILTER PLANT ON PENNSYLVANIA LINES.

ment of which was supposed to be a great mystery, that were claimed to give wonderful results, but generally resulted in an addition to the scrap pile.

The utter failure of these various devices was probably the cause of a great deal of skepticism on the part of engineers and users of the ability of any device to accomplish the results and it was only by slow process and the demonstration, due to actual installations, for considerable periods of trial, that the water softening plants of the present day were accepted as the real solution of boiler troubles.

The earlier plants were almost exclusively of the so-called intermittent type, consisting of a series of two or more wood tanks, into which the water was pumped, then treated to the necessary lime and soda solutions, after which it was passed through the filter, then into the boilers. These tanks were used alternately; in other words, one tank was filled up and treated, and later another tank was similarly treated.

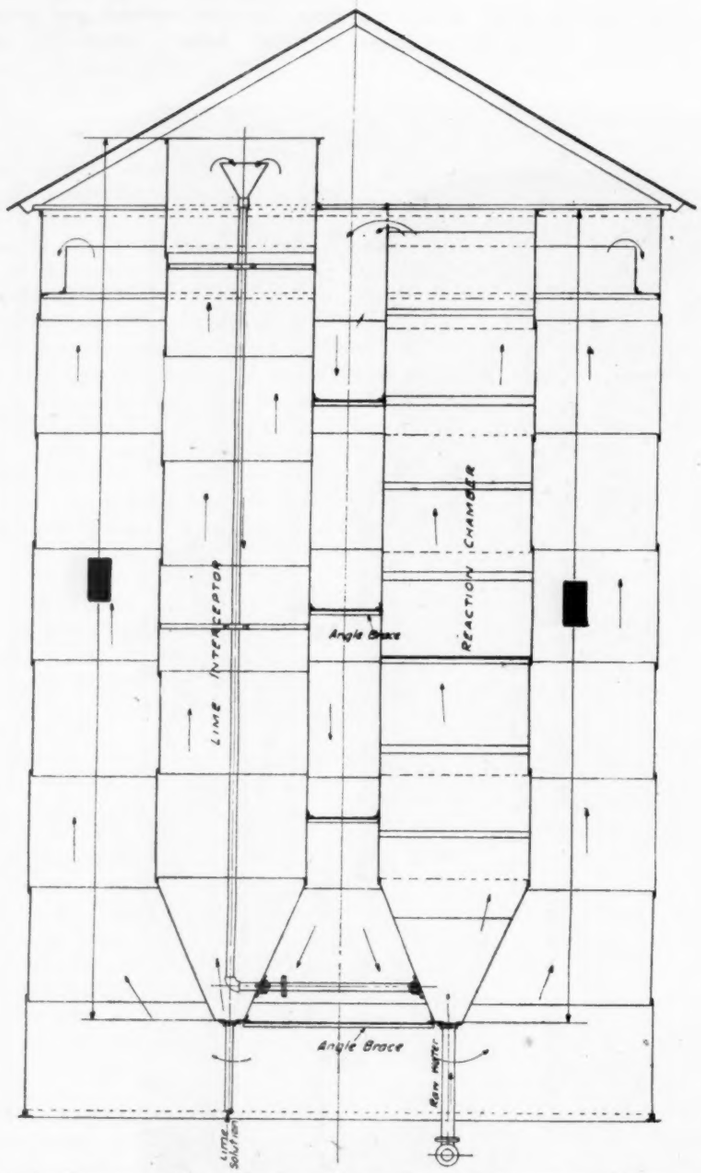


FIG. 2.—SECTION OF MAIN SETTLING TANK, SHOWING COURSE OF WATER.

The efficiency of treating water by this method was thoroughly demonstrated and the great economy, due to the purification of the water previous to its entering the boiler, gradually became recognized. Many installations paid the entire cost in a single year's operation in the saving in fuel and boiler repairs. While fuel and boiler repairs are two large items of saving and are the most apparent, the saving in the labor of taking care of a boiler plant is considerable and the increased life of the boiler is a large item.

Boilers using hard, unpurified water that forms a considerable amount of scale often will not last more than 10 or 12 years, sometimes not so long, while boilers using natural waters, free from scale-forming impurities, will often last 25 and 30 years without any great deterioration.

In locomotive boilers, on railroads, the saving has been enormous, resulting in largely increased runs, reduction of the number of engines out of service for repairs, and a much higher general efficiency.

The space occupied by the intermittent type of plant, as well as the arrangement of it, which required an additional pumping plant for pumping the water from the softening plant to the storage tanks used at the railway station led to the development of a type of plant which could be placed on a limited ground area and from which water could be delivered to the roadside tank by a single pumping.

This brought into use a type of plant that had been used by European manufacturers almost exclusively, called the continuous process or automatic plant and built usually of steel construction throughout. In this a single tank is used in the form of a water tower, of such height that the water will flow from the top of the machine by gravity into the roadside tank.

A number of different designs of these plants are manufactured by different makers. The principles of them, of course, are similar. In some the water is pumped in at the top and carried through the various compartments to the bottom of the apparatus, then up again, overflowing at a point near the top. This necessitates the raising of the chemicals necessary for treatment of the water in bulk to the top of the tower, a distance often of 50 or 60 feet, entailing considerable labor. It also necessitates the placing of all the delicate parts of the machine at this point, where they are subject to the elements in cold weather and inconvenient to the operator. While the machine was developed and it was peculiarly adaptable to railroad work, in many of its features, there still remained a number of objections.

In studying the objectionable feat-

ures of this type of apparatus, the Pittsburg Filter Mfg. Co. has developed a continuous machine, which may be operated entirely from the ground, thereby obviating the necessity of hoisting reagents to the top of the tank, and obviating the necessity of placing heating apparatus in the top of the machine to prevent freezing from interfering with the operation of the machine.

Another feature of this apparatus is that sand or quartz filters are used in filtering the water after treatment instead of the usual wood fiber type generally used in this kind of apparatus.

The plant recently installed by the Pittsburgh Filter Mfg. Co. for the Pennsylvania Railroad Co. at Hartsdale, Ind., illustrated herewith, consists of a large enclosing tank, which is the main precipitating tank. Inside of this tank are located two baffles, between which are a circular baffled reaction chamber and a circular lime saturating tank connected with proper conduits. Located below the main tank are two pressure filters of the ordinary enclosed sand type, also an enclosing tank for making cream of lime, an open tank and a proportional motor operated by the incoming water which pumps the solutions into the water, at the same time agitating them to keep a constant strength of solution.

The inflowing water is led to the motor and passing through it causes it to revolve. The water passes from the motor into the bottom of the reaction chamber. As the motor revolves, it operates two small pumps, one on each side. One of these is arranged to pump water from the main precipitating tank into and through the tank designated as the lime tank, which contains the cream of lime. The water passes through this enclosed lime tank, takes up lime in solution until it becomes saturated, the velocity of the water carrying some surplus in suspension with it into the lime interceptor located in the large settling tanks. The lime water introduced at the bottom of the saturator displaces an equal amount of lime water at the top which overflows the funnel and out-take pipe, delivering it into the bottom of the reaction chamber, where it comes in contact with the incoming stream of raw water.

The baffles introduced in this tank cause a swirling motion which thoroughly mixes the lime water solution with the water. As the mixture rises to the top of this baffle chamber, a solution of soda is introduced at a point about two-thirds of the way up, thus giving the lime an opportunity to combine with the carbonates contained in the water.

Continuation of the mixture of the water with the soda through the remainder of the baffle chamber thoroughly mixes the soda solution with the water and a second reaction takes place.

The combined mixture then overflows the top of this reaction chamber into the space between the two baffles where it pursues a downward course until it reaches the bottom of the baffle plate, then vertically to the top of the overflow trough; flowing over this trough, the softened water is carried through a downtake to the filters. Passing through the sand beds the water is then conveyed to the roadside tank.

The accompanying illustrations show the Hartsdale plant, but the sectional view shown is directly between the downward baffle plates and does not show the action as well as Fig. 4, which is the same type of apparatus except that the machinery is placed upon one side of the main tank instead of below it. The operation of this plant is similar to the Hartsdale plant in every other respect, and the lines here indicate more clearly the course the water pursues, as it passes from the lime sat-

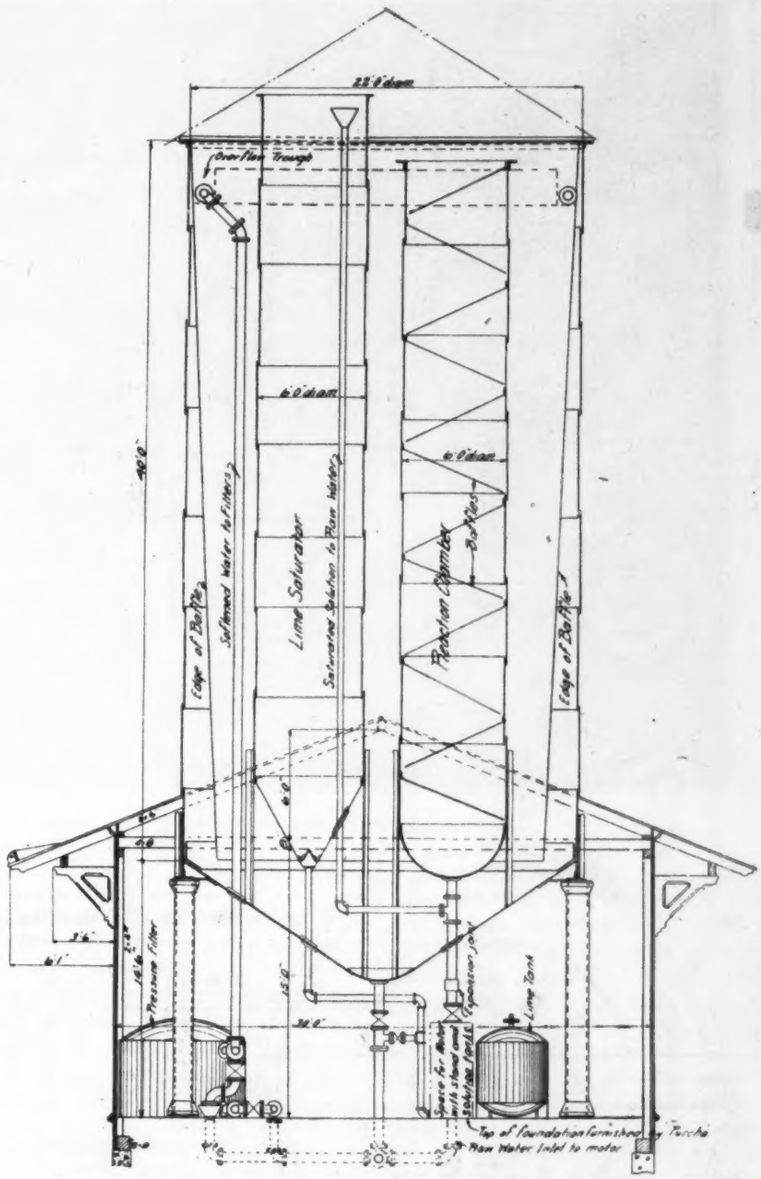


FIG. 3.—SECTION OF HARTSDALE PLANT TAKEN THROUGH LIME SATURATOR AND MIXER PLANT.

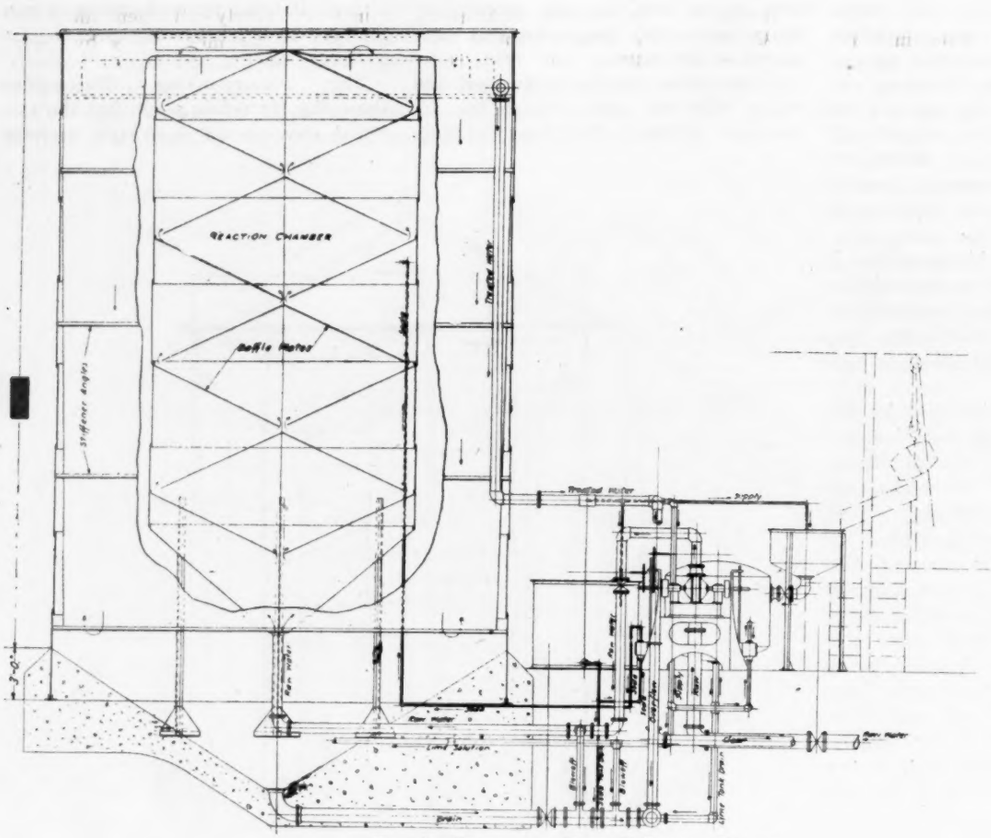
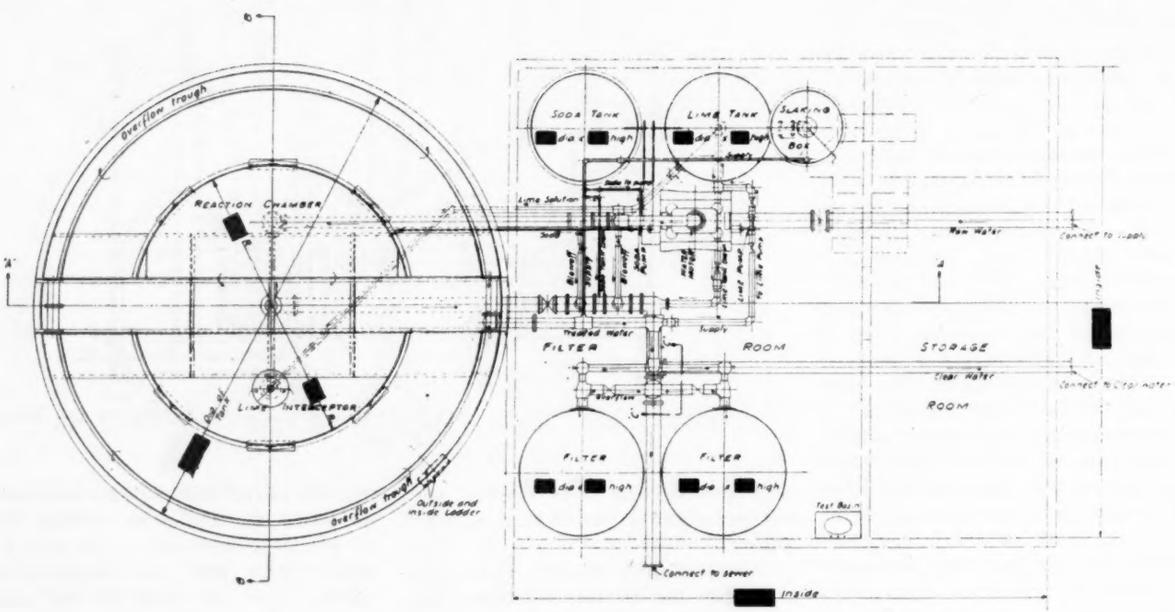


FIG. 4.—SECTION OF TYPE B FILTER PLANT.



PLAN

FIG. 5.—PLAN OF TYPE B FILTER PLANT.

urator into the mixing tank, then downward through the baffle plates and upward, overflowing the trough, whence it is carried again into the pressure filters and the point of distribution.

The interior view illustrates the manner of attaching the soda and lime pumps to the motor, by which they are operated.

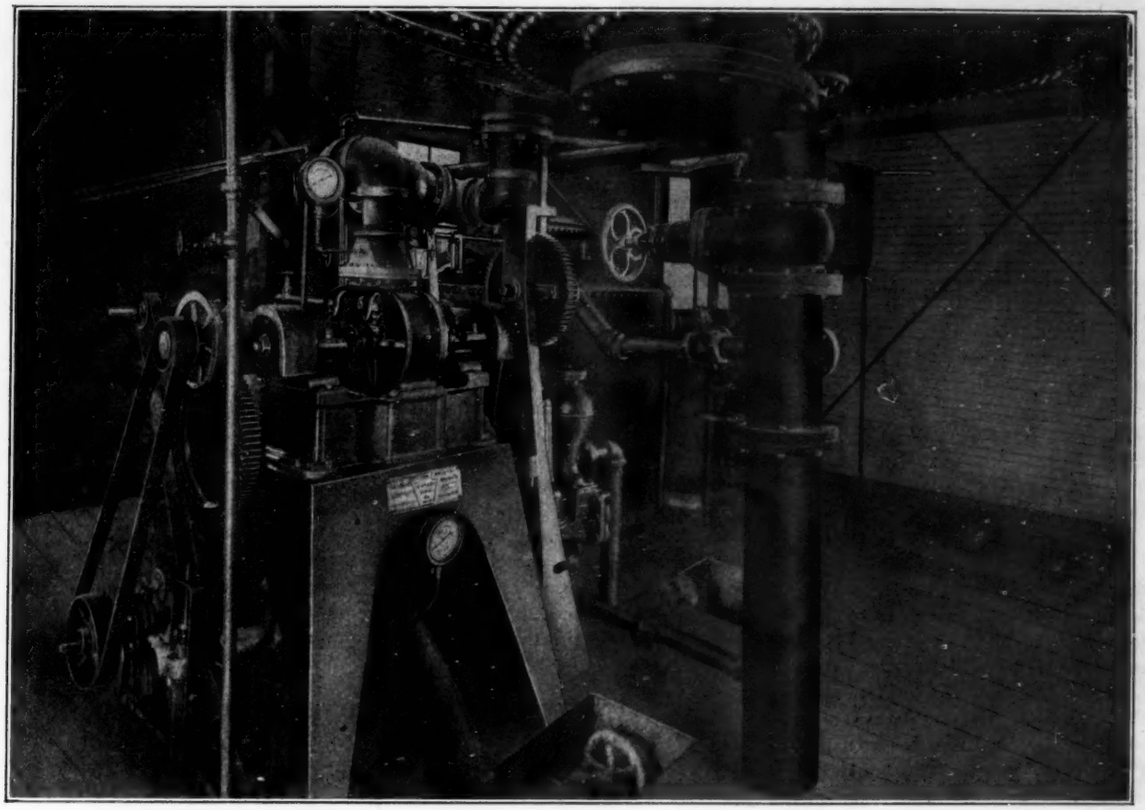


FIG. 6.—INTERIOR OF HARTSDALE PLANT, SHOWING OPERATING MECHANISM.

The summary for September on the rebuilding conditions in California shows building permits issued in San Francisco during the month with a total valuation of $4,113,732, or an aggregate valuation of $85,335,477 in permits taken out since the fire. Real estate sales numbered 610 of the valuation of $2,025,000. Bank clearings were $182,015,230, compared with $198,712,503 September, 1906, and $168,329,716 in September, 1905.

The Cincinnati Planer Co., Cincinnati, is adding an 84 and a 96-inch planer to its line, also a 22-inch machine. These will be built in the new shop of the company at the Factory Colony. The company expects to be in the new location about the first of the year.

BOOK REVIEW

"Industrial Furnaces and Methods of Control."—By Emilio Damour. Authorized translation with additions by A. L. J. Queneau. New York. "The Engineering and Mining Journal." 6 x 9¼ inches. 305 pages. Illustrated. Cloth. Supplied by THE IRON TRADE REVIEW for $4.

The first half of the book is a translation of Damour's "Le Chauffage Industriel at les Fours a Gas." The second half is a contribution by the translator on pyrometry and gas analysis, with chapters on calorimetry and the ultimate analysis of fuels by Myrick N. Bolles, Ph. D. A short preface has been written by Dr. H. M. Howe, the eminent American metallurgist, from which we quote the following:

"To the practicing metallurgist as well as to the advanced student, this work would be very valuable, giving as it does, with well combined clearness and condensation, the results of scientific experiment and of practical experience, and the explanations needed for a firm grasp of the subject. The writers are to be congratulated on having reduced within moderate limits the use of mathematics, probably recognizing as so many experienced teachers do, that to the minds of nearly all men ideas are brought by far more easily by means of their own native and everyday language, and of visible pictures."

A somewhat careful examination of the book shows that Prof. Howe's commendation is fully justified. The first chapter, covering thirty pages, is on the theoretical study of recuperation. The author distinguishes between the thermal capacity and the specific heat of gases, showing that the latter is the first derivative of the former and that it varies with the temperature. The calculations commonly made on the basis of constant specific heat are therefore all subject to a more or less grave error. The author gives tables of thermal capacities of different gases at different temperatures and shows by a graphical method how to obtain the theoretical temperature of combustion of gas of any given analysis and with any given quantity of air in excess. The resulting temperatures are considerably lower than those calculated by the old methods.

Chapter II treats of progress in industrial heating, classification of the

different systems of gas furnaces, their origin and development, starting with the original Siemens producer. He illustrates and describes several modern forms together with a description of the Siemens regenerator.

Chapter III discusses the theory of recuperation; chapter IV direct fired furnaces; chapters V and VI gas fired furnaces with different methods of recuperation; chapters VII, VIII and IX are further studies on furnace action.

The author's style of treatment is remarkably clear, although the subject itself requires close study and some preliminary knowledge of the chemistry of combustion. For engineers and chemists interested in theoretical studies of regenerative furnaces this work is no doubt superior to any other yet in print. The translation seems to have been done with great care and in fact the English is superior to that of many text books origally written in the English language.

In the second part of the book, Mr. Queneau has contributed an excellent but brief chapter on pyrometry which describes the later forms of electrical pyrometers and the Fery radiation pyrometer. Also, a brief chapter on gas analysis and coal and gas calorimetry, and elementary and ultimate fuel analysis. These chapters contain scarcely anything that is not found in other treatises and they are too brief to be of much value. In the determination of the moisture in coal that the author follows the old and bad direction to dry the coal at from 104 to 107 degrees Cent. This is not a high enough temperature to dry out the moisture of western American coals. The chapter on chimneys follows, which is practically useless, giving only the theoretical formulae of Redtenbacher and Peclet, which have long ago been discarded in practical work.

Two chapters on regenerators follow which contain calculations of velocity of gases, weight of checkerwork, composition of gases, volume and temperatures of air, etc. The value of these chapters is greatly diminished by their use throughout of the metric system although here and there when quoting from American practice, English measures are given. Before the American reader could make any use of these chapters, he would practically have to translate the metric measures into English.

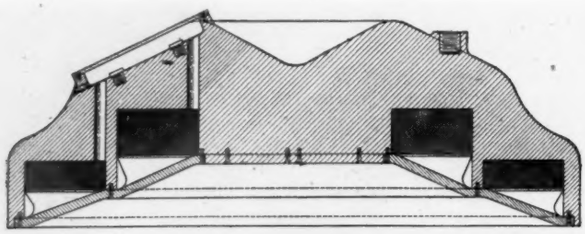


FIG. 1.—CROSS SECTION OF "INTERPOLE" BELL-SHAPED MAGNET.

A brief chapter on reversing valves, hearth and ports of regenerative furnaces follows and the book concludes with a chapter on powdered fuel, which includes a record of tests of a rotary clinkering furnace for the manufacture of Portland cement, which shows the heat utilization of the furnace is 46 per cent, 38 per cent being lost in the chimney, 5 per cent through incomplete combustion and 16 per cent being carried away in the clinker. The author estimates that by proper kiln dimensions and recuperation the total saving of 36 per cent can be effected. A list of more than fifty United States patents on method of burning powdered fuel is added.

CLEVELAND ARMATURE WORKS' NEW LINE OF ELECTRIC LIFTING MAGNETS.

The accompanying illustrations show a line of lifting recently brought out and placed on the market by the Cleveland Armature Works, Cleveland. These are the result of a series of experiments extending over several years, which terminated in the placing on the market of the lifting magnet shown, and which is known as the "inter-pole lifting magnet."

In order to meet all conditions of service, two types of these magnets have been designed and are being manufactured: the "inter-pole bell magnets" are used for loose detachable material, as scrap iron, turnings, borings, etc., and the "inter-pole flat magnet," to be used for material with more or less flat surfaces and in larger pieces, as ingots, heavy castings, etc.

Fig 1 is a cross-section of the bell magnet, which consists of a heavy, annealed steel casting, which, as the name implies, is bell-shaped. Two magnet coils are used and are so

FIG. 2.—MAGNET LIFTING STEEL TANK.

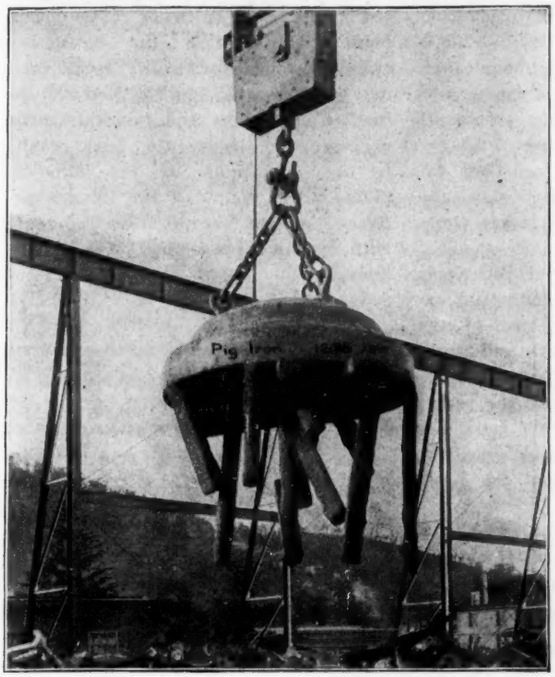


FIG. 3.—MAGNET LIFTING 1,275 POUNDS OF PIG IRON.

FIG. 4.—MAGNET HANDLING 675 POUNDS OF BORINGS.

placed in relation to each other that they form a solenoid in two steps. These steps are separated by an iron ring termed the "inter-pole." This arrangement forms an effective magnetic field, which acts with the greatest intensity toward the center of the magnet. It is also altogether confined within the sphere of the bell. The solenoid action of the coils draws the material to be lifted well up into the bell and the outer shell of the casting extending below the under face of the outside coil, together with a heavy shield of non-magnetic material, bridging from pole to pole, protects the magnetic coils and increases the reluctance between the poles, thereby increasing the effective lifting power of the magnet.

The fact that magnetism is confined entirely within the bell is of importance in handling small material, since it enables the magnet to deposit its load within a narrow radius. Were the magnetism not confined in this manner, the material could be scattered over a large surface.

The remaining illustrations show some of the applications of this magnet. Fig. 2 shows the magnet lifting a steel tank weighing 9,600 pounds. Fig. 3 illustrates it handling 1,275 pounds of pig iron, while Fig. 4 shows the same type of magnet handling 675 pounds of borings and turnings.

These magnets are manufactured in several sizes, the largest of which is 52 inches diameter, weighing 4,900 pounds. This magnet consumes an average of 20 amperes of current of 220 volts and will lift from 1,000 to 1,350 pounds of sand cast pig, or about 1,200 pounds of plate scrap. Its maximum capacity for one piece is 15 tons, which, the maker states, is a performance unsurpassed by any other magnet. Both types of lifting magnets are manufactured for any voltage desired, and the cable connections are interchangeable to make possible the use of either the bell or the flat magnet on the same crane installation.

With each magnet is furnished a twin cable of sufficient length, as well as an automatic take-up reel for the cable. The reel is operated by a spring arrangement entirely independent of the crane gearing and is usually placed on top of the crane carriage just above the hoist. The magnet itself is operated from the cage by a small circuit breaker also supplied with each magnet.

We append below results of a test of a 4,900-pound magnet in handling various materials. The magnet was wound for 220 volts and 20 amperes. During the test the voltage was irregular, most of the time being below 220. At the above voltage, the magnet required 4½ kilowatts per hour to operate it.

Sand Cast Pig.
Average length, 49 inches.

First lift	1,350 pounds
Second lift	710 pounds
Third lift	935 pounds
Fourth lift	900 pounds
Fifth lift	870 pounds
Sixth lift	645 pounds
Seventh lift	825 pounds
Eighth lift	905 pounds

Plate Scrap.
3 x 15 x ¼ inches.

First lift	525 pounds
Second lift	600 pounds
Third lift	425 pounds
Fourth lift	505 pounds
Fifth lift	775 pounds
Sixth lift	1,150 pounds

Turnings and Borings.

First lift	500 pounds
Second lift	675 pounds
Third lift	617 pounds
Fourth lift	630 pounds
Fifth lift	575 pounds

Miscellaneous Scrap Plates, Risers, Etc.

First lift	550 pounds
Second lift	475 pounds
Third lift	500 pounds

Angle Scrap.
¼ x 28 x 2½ x 2½ inches.

First lift	500 pounds
Second lift	475 pounds
Third lift	510 pounds
Fourth lift	500 pounds

Panama Awards.—Award has been made to the William H. Oliver Mfg. Co., Knoxville, Tenn., for the manufacture of 500 all-steel, 12-yard dump cars for use in the construction work on the Panama canal. Fourteen 70-ton steam shovels with a dipper capacity of 2½ cubic yards have also been ordered for the isthmus. Seven of these will be furnished by the Bucyrus Steam Shovel Co. and seven by the Marion Steam Shovel Co. The additional equipment will make a total of 85 shovels at work on the canal.

MODERATE BUYING

Of Machine Tools in Cincinnati—Shops Still Very Busy.

Office of THE IRON TRADE REVIEW,
First National Bank Bldg.
Cincinnati, Oct. 5.

The month of October opens with a better tone to the general situation. It is not difficult to find manufacturers who had a nice month's business in September and have found the first week in this month quite satisfactory. A prominent builder of drills and two large builders of lathes have had a notable run of nice orders. Conditions for the most part are without much change. The buying is moderate and deliveries are catching up with contracts. In some instances manufacturers are able to anticipate deliveries and make shipments in advance of the time the tools were promised. There is a gradual return to normal conditions, but the falling off in orders is only striking when compared with the period of actual overselling which prevailed early in the year.

The shops have been pushed to the limit of their capacity to meet the demands made upon them and are still busy with orders on the books. It is expected that these orders with the business coming in all the time will keep them going at their normal rate until the first of the year at least and by that time a new impetus will likely be given to the demand by the deferred business waiting for the first of the year.

Foreign inquiry and orders are being received in sufficient quantity to be quite encouraging and the outlook for next year from this source of demand is fully up to expectations.

There is a tendency in the shops to use up materials on hand and defer new purchases. This is accounted for by the fact that during the rush period just passed it was difficult to get prompt deliveries of castings and other supplies, and the need of keeping the plant running to its fullest capacity tempted the placing of orders in excess of actual requirements in order to be assured of having the materials on hand when wanted. With the quieting down of all branches of the iron and steel industry, these supplies are being used up under the belief that they can be replaced on a slightly lower level of cost la er on.

The question of new foundry contracts will soon be taken up for next year's supply of castings, and foundries are seeking business now from the machine tool builders. In this district the machinery builders prefer to contract for their castings on the basis of the changes in the pig iron market rather than on a fixed basis of cost.

Eaton, Rhodes & Co. have their plant for crushing heavy scrap iron in operation and are making shipments from the plant right along.

The Hisey-Wolf Machine Tool Co. will move into its new plant on Township and Cormany streets about Nov. 1.

The Cincinnati industrial Bureau is arranging for one of its industrial excursions for Oct. 17. Some of the large iron industrial plants will probably be included in the list of industries to be visited. Among the plants under consideration at this time, are the Hess Spring & Axle Works, the Block-Pollak Iron Co., and the Laidlaw-Dunn-Gordon plant.

William Lodge, of the Lodge & Shipley Machine Tool Co., is arranging for a trip abroad and expects to make an extended stay on the other side this winter.

The John A. Stewart Electric Co. is building a warehouse for electric equipment at Winton Place. The building is 200 feet long by 40 feet in width and of steel construction. It will have a railroad track connecting the house with four lines of railroads. The main office of the company will be located at the warehouse with the sales room in the present location on Fifth street. The company expects to be in the new building in 90 days.

DECREASED INCOME

Of Lake Superior Corporation, but Surplus Is Augmented.

While the gross income of the Lake Superior Corporation for the fiscal year ended June 30, 1907, fell away almost one-half of the preceding year, a surplus of $29,630 was shown from the operations over that period, increasing the total surplus to $621,313. From this surplus was paid $150,000 as a 5 per cent dividend on income bonds, leaving the undivided surplus June 30, 1907, at $471,313.

As the Lake Superior Corporation is a holding company its income consists chiefly of dividends and interest received from securities of subsidiary companies, and the earnings of the subsidiary companies beyond such dividends are not shown in the annual report. It is stated, however, that the total earnings of the subsidiary companies were approximately $870,000 in the year.

During the year the Lake Superior Corporation expended $451,500 for additions, renewals and repairs, of which the larger portion was spent in the building of a basic open-hearth plant. In addition the subsidiary companies have set aside from their net earnings the sum of $341,000 for further extensions and renewals made necessary to secure the best results in the operations of the different plants. The items of the income account of the corporation compare with the two preceding years as follows:

Year ended June 30	1907.	1906.	1905.
Int. & divs. sub. cos.	$527,982	1,102,044	$543,455
Miscell. net int.	150,029	36,700	42,084
Total income	678,011	1,138,744	585,539
Int. first mortgage bonds	500,000	489,883	452,175
Balance	178,011	648,861	133,364
Gen. expenses, taxes, etc.	148,381	91,981	98,562
Surplus	29,630	556,880	34,802
Previous surplus.	591,683	34,802	.....
Total surplus	621,313	591,683	.....
5 per cent div. income bonds.	150,000	.....	.....
Surplus June 30	471,313	.....	.....

The output of the Algoma Steel Co. for the fiscal year was 129,442 tons of pig iron and 178,264 tons of steel rails, compared with 159,740 tons of steel rails the preceding year. On June 30, 1907, the Algoma company had unfilled contracts for 74,378 tons of steel rails. At the annual meeting of the corporation held in Jersey City, it was found that the amount of stock represented was less than half of the 400,000 shares, and an adjournment was taken until Nov. 6.

BOILERMAKERS RETURN.

(Special Correspondence.)

San Francisco, Oct. 4.—The boilermakers have returned to work on practically the same terms which they declined four months ago. They struck May 1, and went out with the rest of the iron workers. After being out several weeks, the Iron Trades Council came to an agreement with the Metal Trades Association of California which will give the men an eight-hour day after three years. Boilermakers' Lodge No. 25, of this city, repudiated the agreement of the council, of which it is part, and its members were not allowed to return to work. Their places were filled by others. George Dunn, representing the International Brotherhood of Boilermakers, came here from Kansas City and patched up the differences which permitted the men to resume work after having been idle for four months.

H. S. White, head of the H. S. White Machinery Co. of San Francisco, visited Redwood City a few days ago in search of a factory location where water and rail transportation may be had.

MEXICAN PROGRESS

IN STEEL MAKING MEETS MANY OBSTACLES.

Great Difficulty in Obtaining Labor.—The Monterey Plant.—Developments in Railway Building.

(From a Special Correspondent.)

City of Mexico, Oct. 1.—Practical men of affairs who have lived a long time in Mexico and who are familiar with the customs of the country, and more particularly with the local labor conditions are frequently edified and amused by the remarks of visitors who, after a few days' or weeks' sojourn in the country, sum up in the columns of the press the advantages which exist for the establishing of a special industry. A deliverance of this nature, by a more than usually prominent tourist, having for its subject the iron and steel industry, has recently been published. The observer expressed surpise at the backward condition of this line of manufacture in view of the large domestic demand and the almost unlimited supply of the raw materials necessary to carry on the industry. "Mexico," he is quoted as saying, "ought not only to be able to supply its own requirements in the line of iron and steel manufactures, but should also be an exporter of such products."

If the gentleman who expressed this immature opinion had taken counsel with the managements of the few establishments of the character spoken of which are in operation at the present time in the republic, and more particularly with the directors of a plant which made a more or less brilliant struggle for existence until some two or three years ago, in the state of Durango, when it succumbed to the inevitable, he would, it is safe to assume, have been more cautious and less optimistic in his remarks.

Large Ore Deposits.

This naturally leads up to the consideration of the obstacles which lie in the path to success in this most important industry in Mexico, where there is so great a demand for rails, structural material, bar iron, etc., etc. There undoubtedly exist in several of the states immense deposits of high grade iron ore and good workable coal; as a matter of fact, the Durango plant which went out of business is situated at the very foot of the great iron ore mountain, famous in history as the Cerro del Mercado. Iron ore cost the company practically nothing and yet the works could not be carried on at a profit.

A ten million dollar iron and steel plant of the most modern character is in operation at Monterey. At the time of its starting it was prophesied in the columns of THE IRON TRADE REVIEW that the company would meet with "an avalanche of trouble" before the desired goal of success was reached. The prophecy was and is true, for despite the great expectations of the enterprising people who established the works and the continuous and insistent demands of Mexican railroads for steel rails, inability to obtain which has often retarded construction and forced the placement of orders in Spain, the Monterey works have not yet turned out a ton of steel rails, although they have been in operation five or six years.

Why Progress Halts.

There are three great obstacles to be overcome in the building up of a successful iron and steel manufacturing plant in this country. They are, in the order of their importance: First, the almost complete absence of the requisite skilled labor, and the all but insurmountable difficulty of obtaining it in competition with the United States; second, lack of transportation facilities in most instances from desirable points of distribution of the finished product to the sources of supply of the raw materials, and, third, the physical difficulties incidental to the following of a calling so strenuous as that of an ironworker in a tropical or semi-tropical country.

Notwithstanding the favorable situation of the Monterey works in the matter of railway facilities, the president of the company, Vicente Ferrara, who is an Italian, has just applied for and obtained from the government a concesssion to construct a line of railway 12 kilometers in length from the works to certain coal fields in the state of Coahuila. This incident in a very small way illustrates the much graver possibilities which might hamper operations under less favorable circumstances.

The Monterey Plant.

The plant at Monterey is as yet in its infancy, the work so far accomplished being little more than experimental. Its originators deserve every credit, and it is to be hoped that in time it may develop its full possibilities. As an indication that this point has not yet been reached, the following dispatch from Monterey, bearing date August 22, seems to be conclusive:

The great blast furnace at the Monterey steel plant was again put in operation yesterday for the first time in several months. This is an indication of a heavy demand on the plant for steel in various forms. The blast furnace has a very large capacity and it is in use only a few months out of each year during which it is able to furnish material for the steel products of the plant for several months.

It is understood, of course, that to the difficulties above enumerated must be added all the others which enter into the problem of making any business successful in any country. Of these, incompetency in the management perhaps stands at the head of the list, although it is not intended to insinuate that this drawback exists or has existed in any of the establishments in Mexico.

For the purpose of fostering the growth of the iron and steel trade in this country, an appreciable increase was made in the tariff rates upon iron and steel products a little more than two years ago. The rate upon iron and steel rails "when the weight of the linear meter exceeds 10 kilograms" was fixed at 2 cents per gross kilo, whereas previously the duty was only 1 cent per gross kilo when the weight was more than 12 kilos to the linear meter, and rails were admitted free at less weights. The increased duty has not yet resulted in the evolution of a domestic steel rail manufacturing industry. If further change is made in the tariff schedules it will in all probability be in the direction of still higher duties, the government being particularly desirous of having the iron and steel products used in the country made at home.

Great Railway Activity.

There is great activity in railway construction despite the advent of the rainy season, which was much delayed this year. The Mexican Central is energetically pushing the work upon its important Manzanillo extension. It is predicted that the management will have the line in operation in a year's time, thus giving the country another outlet to the Pacific.

A statement recently made by the engineering department of the Kansas City, Mexico and Orient Railway Co. shows that most favorable progress is being made upon the construction work both in the United States and Mexico.

Concessions for new railways granted within a short time past include the following: To the Mexican Pacific Co. for a line in the State of

Guerrero, to run from the port of Acapulco to a point on the Coyuca river, 50 kilometers in length. Surveys must commence within six months, and four years are allowed for construction; to Walter C. Palmer for various short lines in the State of Zacatecos; to Geo. W. Bryant, representing the Mexican Milling & Transportation Co., for a line starting at Texetapa station, on the Mexican Central and running to a point near the town of Santa Rosa, with branches to various other towns, mines and haciendas. According to the conditions of the concession, surveys are to begin within three months and construction is to be completed from point to point within stated periods, until the entire line of 80 kilometers is finished, which must not be beyond five years hence. The state government of Chihuahua has given a concession to a mining man at Tarral named Jose Maria Botello, covering a line from that camp to the village of San Juan del Sitio and to La Joya, and a second concession to Senor Tablo O. Prieto, to construct a railway from the town of Allende to the city of Jiminez.

It is reported upon good authority that the National Railway Co. will construct the line projected between the city of Queretaro and Acambaro, for which a concession was granted some time ago to Senor Manuel R. Arriaga, of the City of Mexico. Land owners along the proposed route have subscribed a fund to be used as a contribution towards the cost of construction.

President Diaz's Statement.

In his address to congress upon the reassembling of that body on Sept. 16 President Diaz thus summarized recent progress in railway building in the republic: "The new construction on railways subject to federal jurisdiction aggregates 277 kilometers, the largest contributions being those of the lines from Colombia to Jarita, the Pan-American, Ocotlan to Atotonilco (which has now been completed), the Cananea, Rio Yaqui and Pacific and the line from Navajoa to Guadalajara. The additions to railways subject to the jurisdiction of the states and private railways aggregate 207 kilometers. The total length of the railway system of the republic is 22,392 kilometers.

"The Tehuantepec National Railway has received 300 new freight cars, which, with those built and repaired at its shops, give an equipment of 1,062 freight cars. The earnings of this railway have increased by reason of the new freight traffic, the proportion of increase in earnings in the half-year from January to June last, as compared with the same period of the previous year, being 265 per cent."

AMONG NEW ENGLAND INDUSTRIES.

(Special Correspondence.)

Worcester, Mass., Oct. 1.—The American & British Mfg. Co., Bridgeport, Conn., is working on a $500,000 contract for engines for the Thomas Automobile Co., for use in the Thomas motor cars. Forty 50-horsepower engines hve already been completed. The company has purchased land and is now maturing plans for an addition that will practically double its capacity.

The Worcester Polytechnic Institute begins its present school year with the largest registration of students in its history. During vacation many changes and improvements have been made about the buildings and grounds, and during vacation nearly all the members of the electrical engineering department remained at the institute, engaged in various ways in preparing for the fall work. The work of the present year begins with ten post-graduate students in the department of electrical engineering, the largest number ever registered.

The Gardner General Foundry Co., Gardner, Mass., a corporation organized a few weeks ago, and which was conducting jointly the foundry of the Gardner Foundry Co. and the General Foundry, for the past six months, has sold its interest in the former mentioned to Gustaf E. Hoglund, formerly superintendent of the consolidated foundries, and one of the board of directors of the corporation. Mr. Hoglund will embark in the foundry business for himself under the name of G. E. Hoglund Foundry Co. The Gardner General Foundry Co. is owned and operated by Edward G. Watkins and Ralph N. Wiley, who have bought Hoglund's interest.

Reports form various Worcester machinery manufacturers indicate that business has fallen off to a noticeable extent, but this is welcomed as most shops are sold so far ahead the dropping in orders will not immediately affect output, while enabling builders to catch up a little.

Worcester expects to have a new manufacturing industry, a Pennsylvania industry picking this city as the most desirable for its plant for the manufacture of metal culverts. More specific information cannot be given at this time.

The managers of the sales departments of the American Steel & Wire Co. were in Worcester this week and inspected the north and south works. They were accompanied on their trip by Clinton S. Marshall district manager and other officials. Those in the party were: W. S. Bitting, F. T. Drake, F. W. Simpers, R. K. Shippard and R. W. Bailey, of Philadelphia; C. C. Cluff, of Baltimore; and the following all from New York: E. E. Windler, Maj. W. E. Evans, George A. Cragin, W. B. Perley, J. G. Bateman, T. B. Coles, L. A. Deitrich, J. G. Derricks, J. H. Edwards, H. F. Edmondston, H. A. Flagg, T. A. Gessier, F. A. Keyes, W. P. Keane, S. T. Stainer.

Reed & Prince Mfg. Co., manufacturer of stove bolts, and similar hardware, is to build a $60,000 addition to its already large establishment. It will be a five-story brick structure 224 by 87 feet, and joined to the present factory by a bridge.

Low Fuel Consumption.—The Dunbar Furnace Co.'s No. 2 stack, for the week ending Sept. 28, used only 1,993 pounds coke per ton of pig iron. This stack is using Semet-Solvay by-product coke exclusively for fuel, and about 86 per cent soft and 14 per cent hard Lake Superior ores from the Cleveland-Cliffs Iron Co. mines. The average silicon on the 42 casts of iron was 1.60 per cent and average sulphur 0.039 per cent. This stack runs on foundry, forge, basic, car wheel and malleable grades.

Awarded Barges.—The Panama canal commission has awarded the contract for three steel barges of 400 tons capacity each to the Maryland Steel Co. at a bid of $59,495 with delivery in 120 days. The lowest tender for six heavily constructed steel barges for work at Panama has also been sent in by the Maryland Steel Co. whose bid was $125,700 with the promise of delivery in 200 days.

The Foundation Co., 115 Broadway, New York, which recently made a signal success in sinking shafts at the Syracuse and Bangor mines on the Mesabi range, despite unusual difficulties from water and quicksand, has begun a similar undertaking for the Cleveland-Cliffs Iron Co. at Princeton, Mich. A shaft is also being put down under similar circumstances for the Lackawanna Railroad at Wilkesbarre, Pa.

The Atchison, Topeka & Santa Fe railroad has announced an increase of wages to its 5,000 machinists and boilermakers of two cents an hour, and also an increase to helpers of 1½ cents.

lighting steam turbine, the Mercury arc rectifier for charging storage batteries, and a variety of lamps.

The Westinghouse exhibits were made up of those of the Westinghouse Electric & Mfg. Co., the Nernst Lamp Co., the Cooper-Hewitt Lamp Co. and the Westinghouse Machine Co., eight spaces being occupied. Westinghouse motors were applied to an electric pipe threading machine made by the Curtis & Curtis Co. of Bridgeport, Conn., to a blower of the American Blower Co., to a twin volute turbine tank house pump made by the Watson-Stillman Co., New York; to an American Blower Co. exhaust fan and to a one-ton Yale & Towne electric hoist. In one corner of the exhibition the various stages in the manufacture of the incandescent lamp were shown. Westinghouse auto sparking batteries and storage batteries were also on display and motors of this manufacture were applied to a variety of household uses.

Roth Bros. & Co. Inc., represented by George F. Schminke, New York manager, and H. Coleman, showed electric blowers and exhausters, grinding and polishing machines, and other applications of the Roth motor to a wide variety of purposes. The works of this company are at Chicago. Its exhibit occupied a good space in the front of the Edison Co.'s booth.

The Kenney Electric Mfg. Co., 140 Nassau street, New York, showed a small bench lathe, a bench drill and a bench circular saw, all driven from an ordinary electric lamp socket.

The American Wire Brush Co., 25 Broad street, New York, filled a considerable space with its wire brushes, designed for numerous purposes. Among those exhibited were brushes for cleaning castings and for clearing away filings. These brushes possess the merit of having their wires fastened to the handle in such a manner as to give considerable flexibility, thus prolonging their time of service.

The National Electric Lamp Association, Cleveland, maintained by some thirty manufacturers of electric lamps, was represented by W. M. Skiff of Cleveland with a large and well decorated booth near the entrance.

The Chicago Pneumatic Tool Co., Chicago and New York, showed a Duntley direct current electric hoist, an electric drill and drilling stand, the Duntley electric grinding tools, buffers, blowers, etc., and a Duntley portable vacuum cleaner, shortly to be placed on the market.

Motors manufactured by the Crocker-Wheeler Co., Ampere, N. J., were much in evidence, connected to a number of industrial machines.

The Sirocco Engineering Co., 140 Cedar street, New York, showed one of its small centrifugal fans, motor-driven. This was in the exhibit of Westerberg & Williams, contracting engineers at 120 Liberty street, New York, where a variety of equipment was gathered.

The C. & C. Electric Co., Garwood, N. J., had one of its motors connected to a two-inch Brooks centrifugal pump, all of which formed an interesting exhibit. Several booklets giving information in regard to the Brooks pump were distributed at this booth by the Dayton Hydraulic Machinery Co., Dayton, Ohio.

Motors were also shown by the Allis-Watson Co., eastern sales agents' manager for the Mechanical Appliance Co., of Milwaukee, manufacturer of the Watson multipolar motors and generators, and by Caldwell & Osterhoudt, 232 Fulton street, New York, selling agents for the Century Electric Co. of St. Louis. Photographs were exhibited showing recent work done by the Universal Electric Welding Co., 40 West 13th street, New York.

The Singer Building.—Last week marked the completion of the steel framework for the Singer Building's 41-story tower in New York, which will shortly be entirely enclosed by brick walls. An unobstructed view of the work from every direction has afforded millions of people an opportunity to study modern building methods and its rapid progress upward at the rate of one story in five days has puzzled many. A vast amount of time has been saved by putting in the terracotta floor arches as soon as the floor beams were in place. Every effort has been made to render the structure unburnable.

Swank's New Directory.—The new edition of the Directory of the American Iron and Steel Association of iron and steel works of the United States, familiarly known as "Swank's Book," is now on the press and is fully half printed. It will probably be ready for distribution early in November. Advance sheets indicate that the volume will be unusually attractive and complete, corrections and additions being made up to the time each form is actually printed.

The Dominion Tool Co., Ltd., of Petersborough, Ont., with capital of $100,000 has been incorporated.

MUCH REPAIR WORK

In Contemplation by Pennsylvania Plants—Interest in Native Ore.

(Special Corespondence.)

Harrisburg, Pa., Oct. 8.—Preparations are being made at a number of the furnaces and steel works in this part of the state to take advantage of a lull in fall business to make repairs and half a dozen Eastern Pennsylvania stacks will blow out very soon, probably this month. It is noteworthy that at the plants where orders are being placed for the materials, that everything is wanted in the shortest possible time. At every point there are expressions of belief that more activity will be noticed about the middle of November.

A significant fact connected with the iron business is the reopening of ore fields, several of which were famous half a century ago again attracting capital investment. These banks are at various points near Reading and in the Cumberland and Juniata valleys and are being developed to supply merchant furnaces which are turning to native ores more than ever.

After a short period of repairs the Pennsylvania Steel Co, started No. 1 Steelton furnace.

Several of the mills in the Upper Susquehanna valley are being put on the active list. A number of these plants were shut down in the summer when new business was not very brisk and repairs have been made so that they are expected to run during the winter.

The car works at Berwick and other places are reported as very busy and a fair run of cars is being turned out at the Middletown Car Works. Several foreign orders have been filled in this part of the state lately.

The newly chartered Washington Tin Plate Co. of Pittsburg, in which Richard Murphy is prominent, has filed at the state capital notice of issue of bonds to the amount of $160,000 and increase of stock from $10,000 to $300,000.

There continues to be much activity in bridge building, especially by counties and the state will this month let two big contracts. There are also being advertised a number of hospital building contracts authorized by the recent legislature in which considerable steel is to be used.

The W. H. Newell Brass Works Co., a Philadelphia corporation, has been chartered with a nominal capital of $20,000 for general brass work. W. H. Newell is interested.

GOVERNMENT GUARANTEE

To Lake Superior Corporation Extended—Plate Mill is Planned.

(Special Correspondence.)

Toronto, Oct. 6.—The Ontario government has extended for six months, dating from Oct. 1, its guarantee of the remaining $1,000,000 of the loan to the Lake Superior Corporation, of Sault Ste Marie, Ont. The company assigns the present stringency of the money market as the reason why it has not been able to make any reduction of the liability. Referring to statements that the government intended to insist on having a representative on the board of directors, Premier Whitney gave them a direct denial, saying that the government had not appointed anyone and did not intend to do so.

A number of capitalists including H. S. Holt, F. W. Thompson and C. R. Hosmer, directors of the Ogilvie Milling Co., which has extensive milling and elevator interests throughout the Canadian Northwest, have under consideration the establishment of a steel plate mill at Fort William, Ont. Mr. Holt, accompanied by Engineer Aldrid, of the Shawinigan Power Co., looked over the ground last week, making investigations more especially in regard to the plant of the Kaministiquia Power Co. at Kakabeka Falls, as a means of supplying power for the proposed enterprise. Major J. A. Currie, of the Imperial Steel & Wire Co., Collingwood, is associated in the project. On being interviewed, Major Currie stated that the undertaking was in contemplation, but the plans of those interested had not assumed any definite form and that it would be some time before a final decision was reached.

Edward Gillespie, Wm. C. Burt, John W. Clark and others have been incorporated as the Queen City Foundry, Ltd., of Toronto, with an authorized capital of $40,000.

The Dominion National Smoke Consumer Co., Ltd., with $50,000 capital, has been incorporated by Nelson R. Hand, Ernest C. Tanner, Herbert R. McKinney and others to manufacture smoke consuming devices at Hamilton, Ont.

The new tariff, which has been put into force in the Australian commonwealth, will affect some classes of Canadian manufacturers adversely, more especially the exporters of agricultural implements. About one-third of the shipments of agricultural implements from Canada to that market has been made up of "stripper harvesters," the duty on which has been increased from £12 to £16 specific, which is regarded by the trade here as prohibitive. Duties on some lines of plows are also practically prohibitive. The bicycle manufacturing industry is also hit hard by a specific duty of £5 5s. Several hundred bicycles now en route to Australia made by the Canada Cycle & Motor Co., Toronto, will have to be returned, owing to the duty coming into force in the meantime.

AMONG THE INDUSTRIES OF INDIANA.

(Special Correspondence.)

Indianapolis, Ind., Oct. 7.—The Sinker-Davis Co., which has one of the largest boiler shops and foundries in the city, suffered a considerable loss by fire Sept. 30 in its boiler shop. The building was a frame structure, covered with corrugated iron.

Articles of incorporation have been filed by the Spencer Machinery & Tool Co., which was organized at Spencer last week with a capital stock of $10,000. As soon as a factory can be erected and equipped, the company will manufacture tools, wrenches, trolleys and several varieties of machinery. John B. Runner, John M. Hawkins and William Fender have been elected directors by the stockholders.

Plans are being completed by the International Engineering Co. of Ft. Wayne for erecting and equipping its new factory. An announcement of the incorporation of the company with $200,000 capital was made recently and it is probable that much machinery will be needed when the factory building is completed.

Bids are being asked by the Clay City Lighting Co., of Clay City for furnishing the material and labor for the construction of an electric lighting plant, and also for all necessary equipment. J. M. Long, H. R. Vandevier and W. H. Guirl are the directors.

Construction work on the new Overland Automobile Co.'s factory, this city, has been completed and is now ready for its mechanical equipment. The factory expects to begin operations within the next two months.

State Geologist William S. Blatchley is exceedingly optimistic over the future of the iron industry in Indiana. In time, he believes, with its good railroad facilities, cheap fuel and practically unlimited supply of raw material, it will become one of the chief iron producing states in the union. It is estimated that the larger deposits of iron ore, which could be worked easily aggregate about 15,000,000 tons and that ore in smaller inaccessible deposits amounts to about 10,000,000 tons. Extensive drilling has been done with the diamond drill in Greene and Martin counties.

ELECTRIC SHOW

Illustrated Many Uses for Motors—Some of the Notable Exhibits.

Office of THE IRON TRADE REVIEW,
Room 1005, No. 90 West St., Oct. 4.

The possibilities of the motor-drive system and the wide range of its present-day applications were perhaps never more strikingly demonstrated than by the varied exhibits at the Electric Show, which has just come to a successful close at Madison Square Garden, New York. Probably a dozen manufacturers of motors were represented and these small, compact workers were performing a multitude of tasks, many of them unheard of to the average layman, so recent have these applications been. Motors all over the big garden were performing the usual work of driving numerous machine tools, blowers, hoists, presses, grinding wheels, etc. They were busy at such domestic duties as operating sewing machines, ironing machines, dough mixers, potato peelers, cream freezers, meat choppers and carpet renovators; they were attached to almost everything from rock drills to washing machines, and in one large section were getting along famously at operating a milking machine. In this last-named connection it seems that the practice has become well enough rooted for the origination of prejudices in favor of certain lines, inasmuch as one enterprising manufacturer had the garden placarded with notices to the effect that the milking machine was driven by a Westinghouse motor, adding, "The cows kick on any other kind."

The exhibition sections were uniformly well designed and arranged and the entire show merited the heavy attendance which it had each evening. Those exhibits of chief interest to the metal-working trade are listed below.

The General Electric Co., Schenectady, N. Y., showed a variety of devices requiring eight sections of space. Among these were motors of this manufacture attached to a Bridgeport safety emery wheel, to a blower of the Electric Blower Co. of Boston and to a Simplex filing machine. This company made a feature of its electrical cooking devices, exhibiting a model kitchen equipped electrically throughout. The Temple-Ingersoll electric-air rock drill, recently brought out by the Ingersoll-Rand Co., New York, a Coates clipper drill, a Marvel forge blower and a Kantner miter saw were also exhibited. Other showings here included direct connected gasoline engine generator sets, a train

PERSONALS.

D. R. Copen, of Chicago, formerly of Muncie, Ind., has been appointed trustee of the American Rolling Mill Corporation, now in the hands of a receiver.

R. S. Lackey has been appointed eastern sales agent of the Allegheny Ore & Iron Co., with offices at Clifton Forge, Va. The company will hereafter market its own pig iron.

L. P. Hoster, president of the Columbus Structural Steel Co., Columbus, O., has resigned because of press of other business interests, and at present O. M. Blose, vice president, is filling the vacancy.

Louis H. Morgan, recently manager of the Ridgeway Machine Co., and formerly superintendent of the Pond plant of the Niles-Bement-Pond Co., is now connected with the Vandyck-Churchill Co., of New York, Philadelphia and Pittsburg.

John R. Reigart, who has been employed by the Cleveland-Cliffs Iron Co., at Ishpeming, Mich., has been appointed superintendent of the Crosby mine of the company at Nashwauk, succeeding J. M. Bush, the latter having been promoted and transferred to the Ashland mine, at Ironwood, Mich.

A. M. Rice, of Louisville, Ky., has assumed his new duties as secretary and general manager of the Ohio Elevator & Machine Co., Columbus, O. Mr. Rice was formerly manager of the American Machine Co., of Louisville. Owen T. Snyder, vice president of the Ohio company, has also been made manager of sales.

John Whitcomb Cotton, for many years Chicago representative of the American Tube Works, will shortly take up his headquarters at the home office of the company in Boston. The change has been made advisable by the recent death of Mr. Cotton's brother, Walter G. Cotton, who was president of the company.

Dr. Gustave Fernekes, formerly of the Michigan School of Mines, has been appointed as instructor of analytical chemistry of the Carnegie Technical Institute, Pittsburg, and K. K. Stevens, formerly chief chemist of the Toledo Furnace Co., Toledo, has been named instructor of elementary chemistry in the department of applied science.

Thomas Fleming Jr. has been appointed chief of design in the division of engineering of the Pennsylvania state department of health. Mr. Fleming is a Cornell graduate and was recently with the American Water Works & Guaranty Co.

PIG IRON IMPORTS CONTINUE TO GAIN.

Imports of pig iron to the United States during the month of August show that the increasing tonnage of foreign iron used in this country was being maintained. Pig iron receipts for August were 34,263 tons dutiable, against 53,998 tons dutiable in July, and 18,843 tons dutiable in August, 1906. For the eight months of the calendar year ending August, 1907, total imports were 420,117 tons dutiable, against 203,165 tons dutiable in 1906, and 126,815 tons dutiable in 1905.

Iron Ore Imports.—A gain in iron ore imports continues. In August, 139,225 tons dutiable were received, against 121,844 tons dutiable in July, and 93,3970 tons dutiable in 1906. For the eight omnths period ending with August, 1907, the tonnage was 865,-657, against 737,660 in 1906, and 588,-5226 in 1905.

Crude Steel Imports.—A decline is shown in the imports of crude steel. In August, 1,285 gross tons were received, against 1,297 gross tons in July, and 2,030 gross tons in August, 1906. For the eight months of the year 1907 past, the imports were 10,373 gross tons, against 13,687 gross tons in 1906, and 9,540 gross tons in 1905.

Steel Rail Exports.—In August the steel rail exports from the United States amounted to 37,850 tons, against 37,705 tons in July, and 28,725 tons in August, 1906. In the eight months ending August, 1907, the shipments were 218,570 tons, against 232,-077 tons in 1906, and 190,068 tons in 1905.

Sheets and Plates.—Exports of iron sheets and plates in August reached 3,302 gross tons, against 4,078 gross tons in July and 1,921 gross tons in August, 1906. The total tonnage of the year was 25,401, against 8,520 in 1906, and 4,342 in 1905. A considerable loss over the previous month is shown in steel sheets and plates, August exports amounting to 3,234 gross tons, against 4,959 gross tons in July, and 8,401 gros tons in August, 1906. For the eight months ending with August, 1907, the exports amounted to 59,770 gross tons, against 60,484 gross tons in 1906, and 41,934 gross tons in 1905.

OBITUARIES.

S. A. Woods, president of the S. A. Woods Machine Co., died suddenly Oct. 2, at his residence in Brookline, Mass., aged 80. He was the largest maker of planing and molding machines in the world.

John Galt Craig, until a few years ago general manager of the Griffing Iron Co., Jersey City, N. J., died Oct. 3, of heart disease, at the age of 56. Recently he had been in the automobile business in New York.

William H. Harrison, for thirty years a manufacturer of machinery in New York, died Oct. 5 at St. Cloud, N. J., having been ill for about a year. He was a veteran of the Civil war and was 60 years of age.

Daniel D. Davis, connected about the middle of the century with Monrow, Cambria and Jefferson furnaces in the Hanging Rock field, died Sept. 30 at Oak Hill, Ohio. He was 74 years of age.

Oliver Anderson, member of the firm of Anderson, Porter & Boyd, manufacturers of engines and boilers, Bellevue, Pa., died Sept. 21, at the age of 84 years. He retired from business twenty years ago.

J. W. Morrison Sr., a well known resident of Youngstown, O., died Sept. 27, at the age of 81 years. Mr. Morrison was prominently identified with the industrial interests of Youngstown, particularly in coal and iron.

Alfred Sweeney, for a number of years superintendent of the Chrome Steel Works, died recently at his home in Brooklyn, aged 70 years. At different periods in his life he became superintendent of the Nashua Iron & Steel Co. and of the Patterson Iron Co. He retired from the Chrome works about seven years ago.

F. W. Jerecke, president of the Finch Mfg. Co., Scranton, Pa., founder and machinist, died at a New York sanitarium, Sept. 28, at the age of 74 years, of which 40 years had been spent at Scranton. Mr. Jerecke was well known in the iron trade throughout his section and for many years was identified with the Dickson Locomotive Works.

William H. Wiggin, connected with the International Harvester Co. of Canada, Hamilton, Ontario, died Oct. 2, at Hamilton, after a long illness of heart trouble. Mr. Wiggin was formerly superintendent of the machine shop of the old Washburn & Moen Mfg. Co., Worcester, Mass., now a branch of the American Steel & Wire Co. For many years he was connected with the Washburn & Moen concern, and afterwards associated with the Marcus Mason Co., Worcester. He was 47 years old.

Money Conditions Grow More Stringent

Barring a more tense situation in the money market, the field of stocks and bonds has encountered few developments of decisive influence upon its movement within the week. Sentiment, both investment and speculative, as evidenced by the transactions in, and the fluctuations of stocks within the period, remains clearly bearish, and little new ground has come to light upon which to base a confidence of a near improvement in stock conditions. Trading has been small, amounting to 2,487,212 shares, against 2,357,150 shares last week, and 6,953,400 shares the corresponding week of 1906. Sharp variations in prices have been the exception, and in industrials, though in certain issues decided losses were sustained, generally the range of quotations was a narrow one and without great significance. The inauguration of the crop movement has been responsible for the additional stringency in money. This condition was evidenced by the rise in the call rates to 10 per cent, the highest since early in July, caused by some of the New York banks calling in some of their loans because of the low mark to which their surplus reserve had receded. Time money also took and upward bound, and loans for 90 days and four months have been made at 6½ per cent. The gradual increasing of government deposits in national banks continues to lend effective aid in tiding over the present dearth of available capital both at home and abroad. The five weeks originally planned as the period within which these deposits were to be made, have ended, and as a considerable surplus still remains in the national treasury, the government is continuing the disbursements, thereby producing a more secure feeling in business lines generally. Bonds continue to attract comparatively little interest, sales of the week, exclusive of government bonds, aggregating $5,491,000, against $3,903,000 last week, and $11,775,000 the corresponding week in 1906. A poor statement was issued by the New York associated banks. Total cash holdings fell away $7,621,100 and deposits declined $18,490,400. The surplus reserve was cut $2,998,500, making the total balance at hand $2,648,075, against $9,431,125 Oct. 6, 1906. A contraction of $11,283,100 in loans, against the withdrawals of deposits, was shown.

Copper Stocks.

Boston.—Butte Coalition, closed 15, unchanged over last week; Calumet & Arizona, closed 107, net gain in week 1; Calumet & Hecla closed 640, net gain 15; Green Cananea closed 7⅞, net loss ⅞; North Butte Mining, closed 47, net gain 1⅝.

New York.—Amalgamated copper, closed 59½, net gain 1¾.

Financial Notes.

The J. G. Brill Co., Philadelphia, street car manufacturer, has filed notice of an increase of capital of $336,000, making the total amount issued $9,580,000 of the authorized capital of $10,000,000.

The Tennessee Coal, Iron & Railroad Co. has offered the stockholders the right to subscribe to the new capital issue of 12½ per cent at par. The proceeds from this new issue of stock, amounting to $3,750,000, will be used to complete construction under way at present and to provide for other contemplated improvements.

Commercial failures in the United States during the first nine months of 1907, according to statistics compiled by R. G. Dun & Co., were 8,990 in number and $116,036,348 in amount of liabilities. In the corresponding months of 1906 there were 7,912 bankruptcies, involving a defaulted indebtedness of $84,660,237. The increase over last year's embarrassments resulted in the manufacturing class, with 1,954 failures for $62,783,957, compared with 1,801 failures for $30,409,976 in 1905.

Recent dividend declarations include the following: Nova Scotia Steel & Coal Co., regular quarterly dividend of 1½ per cent on the common stock and 2 per cent on the preferred stock, payable Oct. 14; Hall Signal Co., regular quarterly dividend of 1¼ per cent on the common stock, payable Oct. 1; Tennessee Coal, Iron & Railroad Co., regular quarterly dividend of 2 per cent on the preferred stock, payable Nov. 1.

THE LEADING INDUSTRIAL SECURITIES.

	Clos'ng Quo. Sept. 28	Changes in Week	Date 1907 Ann. M't'g	Stock Outstanding	Dividend Basis	Dividend Last Declared	Dividend Date Last Div. Pay.
Allis-Chalmers	7	− ½	Sept. 5	19,820,000		.....	.....
Allis-Chalmers pr	22	+1¾		16,150,000	7 cum	1¾ Q.	Feb., 1904
American Can	4⅜	− ⅛	Feb. 7	41,233,300		.....	.....
Am. Can pr	49	+ ⅛		41,233,300	7 cum	1¾ Q.	July, 1907
Am. Car and Fdy	35¾	− ¾	June 27	30,000,000		1 Q.	July, 1907
Am. Car and Fdy pr.	121¾	− ¾		30,000,000	7 n. c.	1¾ Q.	July, 1907
American Loc.	51⅞	+1⅝	Oct. 5	25,000 000	5	1¼ Q.	Aug., 1907
American Loc. pr.	100	+ ¾		25,000,000	7 cum	1¾ Q.	July, 1907
American Ship	60¾	.....	Oct. 2	7 600,000	4	3	Sept. 1907
American Ship pr.	103¼	.....		7,900,000	7 n. c.	1¾ Q.	July, 1907
Am. Steel Foundries	6½	+ ½	Oct. 1	15,810,000		.....	.....
Am. Steel Foundries pr	35	+1		17,240,000	6 cum	2½	Aug., 1904
Barney & Smith	65	.....	June 4	2,0.0.000	4	1 Q.	Sept., 1907
Barney & Smith pr.	128½	.....		2,500 000	8 cum	2 Q.	Sept., 1907
Bethlehem Steel	12	−2	April 2	14,862,000		.....	.....
Bethlehem Steel pr.	32	.....		14,90.,000	7 n. c.	¾ Q.	Feb., 1907
Cambria Steel	29¼	.....	March 19	45,000,000*	6	1½ S. A.	Aug., 1907
Cambria Iron	43	− 1		8,408,000*	4	2 S. A.	Apr., 1907
Chicago Pneumatic Tool	36½	− 1	Feb. 18	6,145 800	4	1 Q.	Oct. 1907
Colorado Fuel	18	−2¼	Oct. 21	34.235,500		3½	Apr., 1902
Crucible Steel	67⅞	+ ⅛	Oct. 16	24,578 400		.....	.....
Crucible Steel pr.	63½	+1¾		24,436 500	7 cum	1¾ Q.	Oct., 1907
Empire Steel	8	−1	Feb. 27	2.281,400		.....	.....
Empire Steel pr.	50	−5		2,500,000	6 cum	3 S. A.	July, 1906
Fay & Egan	100	.....	Feb. 19	1 000,000	6	1½ Q.	Aug., 1907
Fay & Egan pr.	128½	.....		1,000 000	7 cum	1¾ Q.	Aug., 1907
General Electric	124½	−1½	May 14	65 167.400	8	2 Q.	July, 1907
Harbison-Walker	15½	+ ⅜	Jan. 21	18,000,000		½	Oct., 1907
Harbison-Walker pr.	73	.....		9,600,000	6 cum	1½ Q.	July, 1907
International Pump	21¾	+1¾	June 4	17,787,300		1	Apr., 1905
International Pump pr.	70	.....		13,835,000	6 cum	1½ Q.	Aug., 1907
Lackawanna Steel.	50	−10	March 13	34,971,400		.....	.....
Lake Sup. Corp.	5½	+ ½	Oct. 2	40,000,000		.....	.....
New York Air Brake	105⅜	− ⅝	June 18	10,000,000	8	2 Q.	July, 1907
Niles-Bement-Pond	130	.....	Feb. 6	5,000,000	6	1½ Q.	Dec., 1907
Niles-Bement-Pond pr.	105	.....		2.000,000	6 cum	1½ Q.	Aug., 1907
Otis Elevator Co.	25	+5	March 18	6.375 500		1½ S. A.	Oct., 1907
Otis Elevator Co. pr.	75	.....		6,449,500	6 n. c.	1½ Q.	Oct., 1907
Penn. Steel	60	−3	May 13	10,750,000		.....	.....
Penn. Steel pr	87	+1		16,500,000	7 n. c.	3½ S. A.	May, 1907
Pittsburg Coal Co	9⅞	− ½	Feb. 11	28 297,600		.....	Nov., 1906
Pittsburg Coal pr.	50½	.....		27,246,800	7 c.	3½	Apr., 1905
Pressed Stl. Car	24⅜	−1⅜	Feb. 20	12 500,000		3	Aug., 1904
Pressed Stl. Car pr.	84¼	.....		12.500 000	7 n. c.	1¾ Q.	Aug., 1907
Pullman	155¼	−2¼	Oct. 17	100,000 000	8	2 Q.	Aug., 1907
Railway Stl. Spring	35¾	.....	March 7	13 500,000	4	2 S. A.	Nov., 1907
Railway Stl. Spring pr.	81½	.....		13,500,000	7 cum	1¾ Q.	Sept., 1907
Rep. Iron & Steel	20	.....	Oct. 16	27,191,000		.....	.....
Rep. Iron & Steel pr.	73½	− ⅜		20,416 900	7 cum	1¾ Q.	Oct., 1907
Sloss-Sheffield	44	.....	March 5	10,000,000	5	1¼ Q.	Aug., 1907
Sloss-Sheffield pr.	95	.....		6 700,000	7 n. c.	1¾ Q.	Oct., 1907
Tenn. Coal & Iron	135	.....	May 7	29,500 000	4	1 Q.	Aug., 1907
U. S. Pipe & Fdy.	29	+ ½	June 26	12 500,000	4	1 Q.	Sept., 1907
U. S. Pipe & Fdy. pr.	75	−4		12.500 000	7 n. c.	1¾ Q.	Sept., 1907
U. S. Steel	26⅞	+ ⅛	April 15	508,302 500	2 n. c.	½ Q.	Sept., 1907
U. S. Steel pr.	88¾	+ ½		360.281,100	7 cum	1¾ Q.	Aug., 1907
U. S. Steel 5's	95	+ ¾		463.798 000	5	5 A.	.....
Va. Iron, Coal & Coke	50	−3½	Sept. 17	8,641,600		.....	.....
Westinghouse Elec	129	−9	July 24	24 998.700*	10	2½ Q.	Oct., 1907
Westinghouse Air Brake	150	−4	Oct. 1	11,000,000*		5 Q.	July, 1907

Par value of shares, $100, except those starred (*), $50.

NEWS FROM MANY INDUSTRIES

New Buyers:—

The Spencer Machinery & Tool Co., Spencer, Ind., has been organized with a capitalization of $10,000 by John B. Runner, John M. Hawkins and William Fender.

The New Haven Coal & Coke Co., capitalized at $125,000, has been organized at Uniontown, Pa., with J. G. Harris, president; T. J. King, secretary and treasurer.

Articles of incorporation have been filed by the Byesville Foundry & Machine Co., Byesville, O., with a capital of $75,000. Those interested are: R. F. Scott, H. C. Callihan, G. W. Weyman, Willis Morris and W. P. Beeson.

Articles of incorporation have been filed by the Kent Machine Co., Kent, O., with a capital of $50,000. Those interested are: F. H. Merrill, M. G. Garrison, J. G. Getz, W. S. Kent and H. H. Line.

M. C. Handian, John J. P. O'Brien, C. K. Brady and others have organized the Wheeling Flexible Ladder Co., Wheeling, W. Va., with a capital of $100,000, to manufacture flexible iron ladders and fire escapes.

The Hamburg Mfg. Co., Hamburg, Pa., capital $50,000, has been incorporated to manufacture the New Century chain hoist, and arrangements are being made to equip a plant with the latest improved machinery. Henry J. Schmick is interested.

John W. Sullivan, Wurtsboro, N. Y.; Edward C. Sullivan and James V. Schenck, 2 Glenada place, Brooklyn, have organized the John W. Sullivan Co., Mamakating, N. Y., to build and repair boats, engines, boilers, etc., with a capital of $250,000.

The Hunter's Island Iron Co., New York, has been formed with a capital of $5,000. Those interested are: Rudolph V. Kern, 205 West Eightieth street; Harry M. Spence, 2159 Eighty-third street, and James F. Carroll, 1 Sutton place, New York.

The Taylor-Garigan Co., New York, engineering, has been chartered with an authorized capitalization of $10,000. The directors are: Robert Taylor, 39 East Twenty-eighth street, Bayonne, N. J., and Ambrose Garigan, 525 East Seventy-third street, New York.

The Harris Pneumatic Co., New York, capital $100,000, to manufacture pneumatic tools, appliances and machinery, has been organized by Francis X. Donoghue, Henry H. Holmstrom, Edward G. McAnaney, Arthur Rowland and George N. Rigby, Yonkers, N. Y.

The Stanhope Forge & Machine Works, Boston, automobiles, motors and machinery, has been chartered with a capital of $10,000. The officers of the company are: President, William N. Gibson, Roxbury; treasurer and clerk, Benton D. Bishop, Dorchester, Mass.

The New York Metal Selling Co., New York, has filed articles of incorporation with a capital of $50,000. The directors are: Misha E. Applebaum, 420 Broadway; Hyman Sonn, Seventy-third street and Broadway, and Henry Sonn, 33 West Eighty-sixth street, New York.

The George H. Rice Co., Brooklyn, N. Y., electrical engineering, has been chartered with an authorized capital of $40,000 by George H. Rice, 237 Maple street; John J. Holshuh, 266 Lefferts avenue, and Thomas M. Harvey, 728 Halsey street, all of Brooklyn.

The Quick Unloading Car Chute Co., Birmingham, Ala., has been organized by J. E. Brazeal, B. M. Brazeal, Fred M. Jackson and H. E. McCormack to establish a plant for the manufacture of a chute invented by J. E. Brazeal for unloading railroad cars.

The Operators' Tool Mfg. Co., Jacksonville, Fla., has been incorporated with $25,000 capital stock to manufacture and deal in tools and implements. The officers of the company are: B. G. Lasseter, president; J. A. Ewing, vice president, and Lyman E. Wells, secretary-treasurer.

The Byrd Mfg. Co., Durham, N. C., capital $60,000, has been formed to manufacture knot-tying machines used in cotton mills. The officers of the company are: J. Harper Erwin, president, and W. J. Griswold, secretary-treasurer, both of Durham, and J. H. Webb, vice president, Hillsboro, N. C.

The Sphinx Foundry & Machine Co., Brooklyn, N. Y., has been formed by Thomas McElroy, 244 Gold street; Harry Hertzberg, 652 Forty-seventh street, and David H. McElroy, 12 Reid avenue, Brooklyn. The capital stock of the company is $100,000, and castings, machinery, etc., will be manufactured.

The New York Link Belt Chain Co., New York, has been chartered to manufacture drive chains, power chains, etc., with a capital of $200,000. Those interested are: Alfred Beinhauer, 289 Fourth avenue; Edward J. West, 418 West 118th street, both of New York, and Samuel F. Clouser, 221 Park place, Brooklyn.

The Selly Iron Works, Inc., New York, has been incorporated to manufacture iron and iron products with a capital of $5,000, by Isaiah Selly and Anna F. Selly, Corona, L. I., and William Selikovitch, 109 Eldridge street, New York. The company is an incorporation of an old concern at 259 West Twenty-seventh street, New York.

The Thomasville Machinery Co., Thomasville, N. C., has been chartered to conduct a general repair shop and deal in all kinds of machinery, such as engines, boilers, saw mills, etc., and to conduct a general foundry. The capital stock is $10,000, and the incorporators are: J. H. Barnes, High Point; R. W. Welborn, Greensboro, and Charles E. Bennett, High Point.

New Construction:—

The Nordberg Mfg. Co., Milwaukee, is progressing rapidly with the construction of its new cast iron foundry.

The Hamilton Emery & Corundum Co., Chester, Mass., is erecting a brick factory and boiler house, 36 x 103 feet.

The Boston Gear Works, Norfolk Downs, Mass., is putting the finishing touches on two machine shop additions of frame and steel construction.

The Baltimore Iron & Metal Co., Baltimore, Md., has awarded the contract for the erection of a three-story warehouse 20 x 70 feet.

The Contractors' Casting & Machine Co., Buffalo, is contemplating the erection of an addition to its foundry. The building will be a one-story structure.

The Fore River Ship & Engine Works, Quincy, Mass., has started work on the construction of a one-story steel and concrete machine shop addition, 125 x 150 feet.

The Electric Cable Co., Bridgeport, Conn., has awarded to Casper Ranger, 10 Bond street, Holyoke, Mass., the contract for the construction of a three-story brick mill, 60 x 200 feet.

Contracts have been let by the Lodge & Shipley Machine Tool Co., Cincinnati, for the erection of an addition to its machine shop. The extension will be built to the west of the present building, and will be one-story high, 90 x 198 feet of brick and iron construction.

The Standard Roller Bearing Co., Philadelphia, has increased its capital of $3,500,000.00 to $5,000,000.00. Large additions are now being made

to the plant and equipment for the purpose of enlarging its department for the manufacture of roller bearings for shafting hangers and also for the establishment of an entirely new department for the manufacture of roller bearings for trolley cars. The saving by the use of roller bearings on trolley cars amounts to about $300 a year per car, and the demand is so great that a large addition to its plant is required to take care of its business.

The Peerless Connellsville Coke Co., Connellsville, Pa., has been organized with Wade Echard, Uniontown, as president; James M. Doyle, Connellsville, treasurer, and P. W. Simon, Connellsville, secretary. Work has been started on a 40-oven plant near the Donnelly and Mayfield plants of the H. C. Frick Coke Co., in East Huntingdon township, Westmoreland county. Christian Echard, of Uniontown, has the contract for the construction of the ovens. Among others interested in the company are C. A. Brill, Dr. T. B. Echard and Dr. H. J. Coll, Connellsville. Offices have been opened in Connellsville.

General Industrial Notes.—

The Tampa Foundry & Machine Co., Tampa, Fla., has increased its capital from $60,000 to $125,000.

The Frunk Machine & Forging Co., Lorain, O., filed notice of an increase in capital from $25,000 to $35,000.

The directors of the American Steel Foundries have organized by the reelection of all the retiring officers.

The Penn Shovel Mfg. Co., Warren, O., is installing a heating furnace in its rolling mill department and also an additional set of rolls for cold steel. This equipment will be used in the manufacture of cutlery and tools.

Every department of the new Malleable Castings Co., Columbus, O., is now in operation and about six tons of small castings are being turned out daily. The greater part of the output is being taken by the Ralston Steel Co., Columbus.

The Falls Hollow Staybolt Co., Cuyahoga Falls, O., reports that the fire Sept. 13, which destroyed the building containing the rolling mill plant, did very little damage to the machinery. The mill is now in operation again and in better condition than before the fire. The company is now in position to execute its orders.

The Lorain Casting Co., Lorain, O., is moving into its new plant and will soon be operating on an increased scale. The new building is a brick structure, 110 x 130 feet, and the larger space for operations will greatly increase the capacity of the plant. A number of good sized contracts have been secured and the working force has been considerably increased. The officers of the company are: E. M. Pierce, president and treasurer; R. Thew, vice president; F. A. Smythe, secretary, and H. B. Davidson, superintendent.

The Loomis Pettibone Co., 2 Rector street, New York, recently incorporated, reports that it will be exclusively engaged as consulting engineer. Burdett Loomis, Hawley Pettibone, H. A. Kimber and L. Lee Straub announce that they will adhere to the work with which they have been identified for the past twenty years, and will continue to specialize in the design, construction and operation of power, fuel and illuminating gas plants, and their application to industrial, mining, municipal and central power station work.

The Seneca Chain Co. has put in operation its new plant at Mansfield, O., in which it has installed 120 fires for machine-made chains, ranging in size from 3/16 to 1¼ inches. The company will also manufacture in its plant all kinds of bright chains for the harness and jobbing trade. The erection of the Mansfield plant, in addition to the large works now operated at Kent, O., was necessitated by the large increase in the company's business. M. G. Garrison is president; C. M. Power, secretary and general manager, and C. Mehrle, superintendent.

At the annual meeting of the Westinghouse Air Brake Co., Oct. 1, the proposition of the directors to increase the capital stock from $11,000,000 to $14,000,000 and the payment therefrom of a stock dividend of 25 per cent was approved. The directors were elected as follows: President, George Westinghouse, Robert Pitcairn, John Caldwell, E. M. Herr, George G. Smith and H. G. Prout. Of the total 220,000 shares there were represented 147,536, the largest number at any meeting held in recent years. The directors decided to call a special meeting Dec. 3 to complete the legal details of the increase in the capital stock.

Trade Notes:—

Dravo, Doyle & Co., Cleveland, announce their removal from 806 New England building to 201 Citizens' building.

The National Foundry Co., Erie, Pa., is rapidly perfecting its steel casting department and is now in shape to handle the large tonnage of custom work. The company has just completed a very large contract for steel castings for the Indiana Steel Co., Gary, Ind., and at the present time is also producing a large tonnage of steel castings for ship building concerns.

Fires:—

The plant of the Cincinnati & Hammond Spring Co., 293 Summer street, Cincinnati, was damaged $500 by fire Sept. 27.

The machine shop of W. G. Boggs, Lakeview, O., suffered a loss of several thousand dollars by fire Sept. 29.

The plant of the Michigan Stove Co., Detroit, sustained a loss by fire which damaged the aluminizing department Oct. 3.

The St. Louis Blast Furnace Co., St. Louis, was damaged about $10,000 by an explosion of an engine blast furnace plant, Sept. 27.

OPPOSED TO THE CLOSED SHOP.

A decisive stand on the open shop question has been taken by Congressman Edwin Denby, of Michigan. In refusing the request of a delegation of striking telegraph operators to endeavor to interest President Roosevelt in behalf of the men, Congressman Denby outlined his position on labor unions in the open-shop issue in part as follows: "My views upon the question of unions are simply expressed—I believe in unions. I believe that if rightly conducted they do a great deal of good, but I do not believe in the prevention of men from working for an employer, unless they become members of a union, nor do I believe in any strike based upon the refusal of union men to work with non-union men. To say that I shall not secure employment in the city of Detroit, unless I associate myself with a union, is to restrict my liberty and the liberty of my employer. If my work is good I have a right to employment, if I can get it. If an employer pays good wages and treats his men well, he has a right to employ whom he chooses. Any other course is totally contrary to the genius of our civilization and to the spirit of American liberty."

N. F. A. Convention.—The annual convention of the National Founders' Association will be held Monday and Tuesday, Nov. 11 and 12, at the hotel Astor, New York. The sessions will be devoted to the usual routine. On the Wednesday evening following the convention, the annual banquet will be held and speakers of national prominence will deliver toasts.